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The Journal of the American Medical Association

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THE TREND OF AMERICAN OPHTHALMOLOGY *

JOHN O. McREYNOLDS, M.D.
DALLAS, TEXAS

For thirty years, we have watched with interest the currents and countercurrents in ophthalmic practice, and a few facts of some prophetic value have gathered above the horizon. In the brief span of three decades, we have seen modes of practice rise and fall, and then be forgotten. The very demands of the times are changing, and ophthalmology will meet these demands with her accustomed wisdom and zeal. Whole groups of diseases have lost their serious menace, and in the future will become relatively rare. Ophthalmia neonatorum will no longer take its heavy toll among the children of our country. The advanced and destructive forms of trachoma are being rapidly eliminated, and with this progress will go the necessity for operations correcting lid deformities resulting from this disease. With the marked diminution in severe, chronic conjunctival affections, and with the improvement in the treatment of nasal affections, there has been a distinct reduction in the most troublesome forms of lacrimal disease. In fact, the infectious processes involving the superficial ocular structures are rapidly assuming a less important rôle, and with the increased facilities in transportation and communication, all of the more obstinate forms can more readily gain access to efficient modes of management.

A notable change has developed with regard to pterygia. The extremely large pterygia covering the major portion of the cornea have become less frequent, because of efficient treatment more promptly employed; while the small pterygia, especially among women, have materially increased in number because of the more prolonged exposure to wind and dust, incident to motoring and other forms of outdoor life, which in recent years have become more prevalent.

On the other hand, many other kinds of ocular disorders have apparently increased in number, especially cataract and glaucoma. Senile cataract has actually increased by virtue of the fact that we have in this new country a relatively larger percentage of comparatively old persons. And unless some more effective mode of prevention or retardation shall be developed, we may expect an increase in the number of cataract operations. This increase will be still further augmented by the more frequent employment of intracapsular methods of extraction of immature cataracts in order to avoid the long and disheartening period of slowly approaching blindness, as the cataract proceeds in its tedious process of ripening.

In the case of chronic glaucoma, the increase may be more apparent than actual, on account of the greater care and skill commonly employed in the making of a complete and thorough diagnosis.

It is safe to foretell that in the future there will be a much greater emphasis placed on diagnosis by the aid of the Gullstrand slit lamp microscope and other highly specialized optical instruments, and particularly by a more critical study of underlying systemic conditions and a more searching investigation into obscure focal infections and postocular lesions.

In fact, medical ophthalmology must assume a position of greater magnitude, and operative procedures will be undertaken only after the most exhaustive inquiry into every possible cause that might be a factor in producing the disease condition or in modifying the process of healing, or the final result, should an operation be regarded as essential in securing relief.

The whole subject of so-called asthenopia must demand renewed energy in ascertaining the relative importance of anatomic anomalies and functional disturbances operating through the central nervous system.

As the demand grows for more accurate work in diagnosis through unremitting diligence and care, the demand will also grow for greater skill and precision in the actual performance of such operations as may be considered judicious. And, as abundant experience is a requisite for the highest technical skill, the public may regard it necessary to recognize as ophthalmic surgeons only those who have acquired notable proficiency in this art. Such a condition would by no means imply that medical ophthalmology was in any degree inferior in its requirements or in its compensation to surgical ophthalmology. On the contrary, it is highly probable that the medical ophthalmologist will have many advantages in the preservation of his physical vigor from the exhausting solicitude necessarily associated with important ophthalmic operations, especially of the intraocular type.

A survey of the daily work of any busy ophthalmologist will disclose the fact that the more opulent patients do not predominate in the surgical group, and I am sure that most of the leading ophthalmologists will testify that their principal income arises from their nonoperative cases. It must be admitted also that while ophthalmic surgery is the oldest and most distinctly specialized of all branches of surgery, still it remains confronted with certain difficulties and dangers that do not pertain to any other kind of surgery. And because of these hazards, the proportion of unqualified successes has never approached the degree of perfection that would be popularly supposed to exist.

* Chairman's address, read before the Section on Ophthalmology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

If one compares the operative results in cataract and in acute and chronic glaucoma with the whole group of operations in abdominal and pelvic surgery, one will be struck at once with radical differences which emphasize the greater hazards of intra-ocular surgery.

In what other kind of surgery would a few drops of blood, as from minute retinal or choroidal vessels, produce irreparable disaster?

Most serious operations in general surgery are for the removal of abnormal growths or tissues, while the most important intra-ocular operations aim at the restoration of the function and comfort of a perfect optical organ, with preservation of size, form and intra-ocular tension. Myriads of illustrations could be adduced to show the increased hazards that pertain to all intra-ocular surgery.

Then, in the various operations on the extrinsic ocular muscles, we have to contend not only with the mechanical problems presented by anatomic deviations from the normal, but also with the uncertain and variable influence of the nervous system on the harmonious cooperation of twelve muscles which must work with mathematical precision in all of the infinite number of positions in which the visual axes may be directed.

Finally, we should not forget the significant fact that our professional progress is related not only to medical literature and individual experience, but also to personal contact with the leaders in ophthalmologic thought. This contact is of immense assistance in more accurately assessing the value of the various contributions in the written volume of our labors, and even more in the vitalizing stimulus of strong, active and courageous minds working together in hearty sympathy in a common cause. So we may find that the ophthalmic section is not only a school that is rich in recorded experience, but a school that is strong in the silent influence which it brings into the thought and action of our fellows.

Who can remember the firm and inflexible figure of Hermann Knapp standing in our midst, telling without reserve the whole story of his successes and his failures, and not feel the thrill of a renewed impulse to find out the truth, to prove it, and to tell it without fear or favor?

Who can bring back on the wings of memory the radiant face of Risley, breathing the very soul of sympathy and tenderness in his voice and in his very life, and then not feel afresh the spirit of toleration, of lofty ideals, and of good deeds that make up the crowning glory of character?

Who can recall the brilliant work and unselfish service of men like Agnew, and Webster, and Noyes, and Norris, and Oliver, and Green, and Calhoun and a throng of others we have known, and not feel a new call to duty and a new courage to answer that call?

Vital Statistics of Sweden.—According to Swedish statistics, 12,457 of a total population of 5,712,740, or 2.18 per thousand, succumbed to "old age diseases" in 1916, the total deaths numbering 77,771, or 13.61 per thousand, against 121,679 births, or 21.5 per thousand inhabitants. Tuberculosis claimed 11,830; diseases of the respiratory organs, 8,666; cancer and other tumors, 6,614; organic diseases of the heart, 6,506; and cerebral hemorrhages, 4,117, while deformities and diseases of the new-born, five other contagious diseases, suicides and violence were responsible for about 3,000 deaths, each.

INTRACRANIAL HEMORRHAGE IN THE NEW-BORN *

WILLIAM SHARPE, M.D.
Professor of Neurologic Surgery, New York Polyclinic Medical School and Hospital
NEW YORK

The condition of intracranial hemorrhage in the new-born has been diagnosed and studied more as a chronic condition, as an end-result, rather than being recognized in the acute stage within the first ten days after birth. It has been this lack of recognition of the condition as an acute lesion at the time of birth and then the development later, in the children surviving, of the varying degrees of mental and physical impairment as a chronic condition that have permitted much confusion to arise regarding the etiology of the majority of the cases of cerebral spastic paralysis with and without marked mental retardation. For many years it has been recognized by obstetricians that severe intracranial injuries of the new-born could occur at the time of birth, particularly with difficult, prolonged labor and with the use of instruments of the type known as "high forceps." When death did occur, and the actual intracranial lesion of extensive hemorrhage was demonstrated at necropsy, the opinion could be expressed that it was fortunate—both for the relatives and for the child itself—that death intervened and spared all those concerned, including the taxable community with its overflowing state institutions.

These extreme moribund cases of acute intracranial hemorrhage in the new-born are usually recognized; but, most unfortunately, it is in the more common and milder cases, in which the intracranial hemorrhage is less extensive and rarely diagnosed, that the child frequently survives, so far as life is concerned, only to develop later the definite physical impairments and mental retardation so characteristic of this most pitiful group of patients—the bane of the neurologist, pediatrician, orthopedist, and the general practitioner himself. The acute condition at birth not being recognized and often not even suspected, naturally the later development of the chronic condition is usually ascribed, not to a birth trauma, but rather to an obscure lack of development, an earlier meningo-encephalitis, tainted heredity, syphilis, cranial trauma during the years of infancy, or some other factor—all possible causes and considerations in the diagnosis of the chronic condition, and yet not the most common cause, which is an intracranial hemorrhage at the time of birth. It is with these etiologic factors in mind that I desire to indicate briefly the development of medical knowledge regarding this rather common chronic condition, and then to present some recent observations regarding the acute condition in a series of 100 consecutive new-born children.

CONFUSION IN DIAGNOSIS

Although the condition of extensive intracranial hemorrhage in the new-born had been occasionally mentioned in the literature, the chronic condition in the patients surviving from the milder forms of the acute lesion was rarely, if ever, diagnosed, and even Mr. W. J. Little [1] of London, in 1843, in his first monograph on cerebral spastic paralysis in children,

* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

1. Little, W. J.: Deformities of the Human Frame, Lancet, 1:350 (Dec. 16) 1843.

the now so-called Little's disease, stated that the condition was due to an impairment of nerve tissues resulting from their lack of development and also to an earlier meningitis. A few cases following difficult labor were, in his opinion, the result of intracranial hemorrhage at birth. But it is most interesting to note that in his second monograph [2] on cerebral spastic paralysis, published in 1862 (just nineteen years later), he stated that, in his opinion, almost 75 per cent. of these cases were the result of an intracranial hemorrhage at the time of birth. Unfortunately, the later observations of Mr. Little regarding the great frequency of intracranial hemorrhage as the chief cause of the chronic condition of cerebral spastic paralysis with and without marked mental retardation have been largely misinterpreted by the medical profession, so that even at present the diagnosis of Little's disease ordinarily implies either a lack of development of cerebral tissues of unknown origin or a destructive process due to an earlier meningo-encephalitis—with the etiologic factors of heredity and of syphilis being common ones—and rarely is this chronic condition in children ascribed to a probable intracranial hemorrhage occurring at the time of birth and of not sufficient amount to cause the early death of the child. The severe acute lesions of intracranial hemorrhage in the new-born are usually recognized within the first week after birth, and especially if the baby dies; but, if the baby survives this acute condition by the natural means of absorption of a large amount of the hemorrhage, then the clinical signs of the intracranial lesion quickly disappear within the first month after birth, if, indeed, the signs have been definite enough to be recognized at all as indicating a serious intracranial lesion.

The baby may thus be considered normal until months later, when it is noticed that the child is not beginning to hold up its head; is not sitting up when it should be attempting to do so, and that a stiffness and spasticity of the extremities of various types and degrees is developing of one leg or of both legs, so that they remain crossed in adduction; and of one arm or of both arms so that they become flexed with the hand clenched, the thumb being strongly adducted to the palm and beneath the clenched fingers—the typical clinical picture of early cerebral spastic paralysis of the hemiplegic, diplegic and paraplegic types. The associated mental impairment is frequently indicated grossly by a retardation of speech for months after the usual time. It is these later chronic patients who so often have passed from the observation of their attending obstetrician, if, indeed, there was any marked and recognized clinical evidence of an intracranial hemorrhage within the first two weeks after birth, that have permitted these cases to be variously diagnosed—Little's disease, to be sure; but as to its cause, rarely has the diagnosis in these chronic cases been the definite one of an intracranial hemorrhage at the time of birth.

The chief reason for this confusion in the diagnosis has been the vagueness and even lack of marked clinical signs indicating the acute lesion within the first ten days after birth in the majority of these patients, with the exception of the extreme cases in which the intracranial hemorrhage and the associated cerebral edema were most extensive and to a degree causing serious signs and even early death. In the milder cases of less extensive hemorrhage, the children survive after a period of from ten days to two weeks, during which the clinical signs of a possible intracranial lesion are most meager. This clinical difficulty of accurate diagnosis of the acute condition in the new-born will be considered later. The second factor in the tardy recognition of the intracranial lesion in the chronic cases has been that the babies surviving the acute condition have been considered, and often are, apparently, normal for a period of months after birth, until the seventh or eighth month and even later, when the spasticity of one or more of the extremities of varying degree appears—the child not holding up its head, sitting up and later walking and talking as it should—at a time when the patient has often drifted to a physician other than the obstetrician, so that the vague clinical signs of the intracranial condition at birth, even if suspected, are not correlated with the later clinical findings of physical and mental retardation, and therefore the diagnosis of the later chronic intracranial lesion has at best been only a tentative one, and more often the condition has been ascribed to some mysterious lack of development of cerebral tissues, heredity, syphilis, and other hopeless conditions which dismay the parents on account of the fear of having future children.

CHRONIC CEREBRAL SPASTIC PARALYSIS

During the last ten years [3] I have had the opportunity of examining 5,192 children having the various forms of cerebral spastic paralysis with and without marked mental impairment; the age of these patients (over 1 month) ranged from 34 days to 23 years. In this series of chronic cases, in only 671, or 12 + per cent., was there found definite evidence of an increased intracranial pressure to the degree of producing fundal changes observable with the ophthalmoscope [4] and of being accurately measured by the spinal mercurial manometer at lumbar puncture. By these two modern tests, and especially the latter, it has been possible to differentiate, to a very large degree, those patients having a definite increase of the intracranial pressure (only 12 per cent. in this series) and therefore the ones that may be benefited by a lowering of this pressure either by medicine (thyroid and thymus therapy) or by the cranial operation of decompression and drainage, from those other patients (88 per cent. in this series) not having an increased intracranial pressure and therefore to whom little, if anything, other than orthopedic measures, can be offered to improve their condition, a permanent cerebral damage having already occurred.

Of these 671 chronic patients having a definite increase in the intracranial pressure, 604 have had a

2. Little, W. J.: On the Influence of Abnormal Parturition, Difficult Labora, etc., Upon the Mental and Physical Condition of the Child, Obst. Tr. **3**: 293, 1862.

3. Sharpe, William: Brain Injuries, J. A. M. A. **66**: 1536 (May 13) 1916; Proc. Am. Assn. for Feebleminded, 1918.

4. In not one of these patients has the intracranial pressure been so high as to produce the so-called "choked disks" (a measurable papilledema of 2 diopters plus), but only those fundal changes indicative of a milder degree of increased intracranial pressure—dilatation of the retinal veins, edematous obscuration of the disk margins, especially on the nasal side, and frequently of the nasal halves of the disks themselves. Whether these fundal changes in the individual case are within normal physiologic limits may be ascertained by the more delicate and accurate test of a measurement of the pressure of the cerebrospinal fluid at lumbar puncture as registered by the spinal mercurial manometer. It is an interesting observation in this connection that "choked disks" are only occasionally found in the acute traumatic cases of adults—apparently in only those patients having a large, slowly forming extradural hemorrhage of the middle meningeal artery, and thus gradually producing an extreme intracranial pressure as of tumor formation; in the more common extensive and rapidly forming subdural hemorrhage, on the contrary, the resulting sudden rise of the intracranial pressure apparently precipitates such an early medullary edema and the death of the patient even before the high intracranial pressure can produce a measureable papilledema. In only nine patients in a series of more than 600 acute brain injuries in adults has the condition of "choked disks" been observed.

subtemporal decompression with drainage of the partially blocked cerebrospinal fluid, and in all of them, with the exception of nineteen cases, the pathologic condition has been the same—edematous "wet" brains under varying degrees of increased intracranial pressure, and along the thickened walls of the supracortical veins in the sulci could be observed a whitish cloudy new tissue formation—the organization-residue of a former layer of supracortical hemorrhage. Since it has now been conclusively demonstrated that almost 80 per cent. of the cerebrospinal fluid is excreted normally through the walls of the supracortical veins into the blood stream, and that only the remaining 20 per cent. is excreted by means of the sinuses, pacchionian bodies, etc., and not almost entirely by the latter, as had been believed and taught, these operative and postmortem findings of organized new tissue formation about the supracortical veins explain the partial blockage of the little stomata of exit of the cerebrospinal fluid, and thus the edematous swollen brain associated with a resulting increased intracranial pressure of varying degree according to the amount of blockage. (The blockage resulting from a former meningeal exudate is much more extensive and complete, producing the various degrees of so-called external hydrocephalus and, if the aqueduct or the foramina of Magendie and Luschka should be occluded, then the ventricular dilatation of internal hydrocephalus.)

The histories of the labor and of the first week after birth of these chronic patients having cerebral spastic paralysis, with and without marked mental retardation, with the subsequent operative and postmortem findings [5] of an organic partial blockage of the excretion of the cerebrospinal fluid producing the increased intracranial pressure of chronic cerebral edema,[6] have been most instructive; 81 per cent. have been first children; 72 per cent. have been boys; 95 per cent. have been full-term babies; in 90 per cent. the labor has been prolonged and difficult, forceps being applied in 76 per cent. of them, although in a large percentage of these cases, more as a last resort than as an early indication; in 17 per cent. it has been from a breech presentation. Pituitary extract was reported as having been used in 8 per cent. of these cases. During the first week after birth, 64 per cent. of these children were considered more drowsy and stuporous than is normal, 23 per cent. refusing to nurse, and 78 per cent. not evincing the normal demand for food; 39 per cent. had muscular twitchings of varying degree, particularly of the orbital muscles and of either leg or hand; in 17 per cent. general convulsive seizures occurred one or more times during the first two weeks. An icteroid appearance was noted in 18 per cent. Within two weeks after birth, 61 per cent. of these children were so-called "well" and "normal" (if anything serious had been suspected at all), and in 82 per cent. of them, within one month after birth, the child was "to all appearances" normal in every way. With the exception of 21 per cent., it was only in the later months of the first year that it was observed that the child was not beginning to hold up its head and to sit up when it normally should do so, and in 79 per cent., the beginning of spasticity of the legs or arms was not demonstrable before the seventh month. The later history of not walking and talking within the normal age limits varied by months and even years, a small percentage never having walked or talked. The Wassermann test of the cerebrospinal fluid was positive in only 0.5 per cent. of all the cases.

5. During the last eight years, I have insisted, before performing an operation on any patient having a chronic neurologic condition, that the nearest relative give me, in writing, permission to make a postmortem examination in case the patient should die (and naturally one does not expect the patient to die), in order to ascertain the real cause of death rather than accept the common report of "shock," "cerebral or pulmonary embolus," and "thrombus formation." If death is due to an operative error or to some avoidable complication, then it is for the surgeon to realize it so that its repetition can, if possible, be prevented in future patients; moreover, the accuracy of the diagnosis is thus confirmed or disproved, and the pathologic lesion is carefully examined. The cooperation of the nearest relative in permitting these examinations has been the rule; in only three instances in a series of more than 1,200 patients operated on was a flat refusal maintained—and no operation was performed.

6. Sharpe, William: The Condition of Traumatic Cerebral Edema, Am. J. M. Sc. **165**: 405 (March) 1923.

ACUTE INTRACRANIAL LESIONS FOLLOWING DIFFICULT LABOR

During this period of 1913 to Jan. 1, 1923, I have had the opportunity of examining in consultation and treating forty-six new-born babies within the first two weeks, the diagnosis being a serious intracranial lesion, most probably hemorrhage, following very difficult labor with and without the use of instruments. The acute condition of these children was considered of such grave character that early death was feared and it was hoped that possibly a cranial operative procedure might offer the child a chance of recovery of life at least. Lumbar puncture was performed on all but two (these two having died before the tests could be performed), and free blood under varying degrees of increased pressure was found in the cerebrospinal fluid of 87 per cent. of those patients tested during the first week after birth; during the second week, and especially later, the lumbar puncture becomes increasingly less valuable as a diagnostic aid, the blood usually coagulating within the first ten days. Repeated lumbar punctures for spinal drainage were used in four of the milder and earlier cases within the first week in the hope that the intracranial hemorrhage could all be drained in this simple and safe manner; but in only two of them, after four and seven lumbar punctures, respectively, every twelve hours, did the fluid become clear and of normal pressure. This method of spinal drainage should be attempted in all but the very extreme cases of extensive intracranial hemorrhage under high pressure, within the first week after birth; if then the cerebrospinal fluid does not become clear or the pressure become normal and remain normal, the cranial operation of modified subtemporal decompression and drainage should be considered. The operative and postmortem findings in 100 per cent. of these acute extreme cases disclosed subdural, supracortical and subarachnoid hemorrhage of varying degree.

During the last three years I have become more and more impressed with the fact that these extreme acute cases of extensive intracranial hemorrhage of the newborn, to the degree of producing profound unconsciousness, inability to nurse and even convulsive seizures, were almost the only ones being recognized by the obstetrician with any degree of certainty, the cases of milder degree and of less extensive intracranial hemorrhage at the time of birth not producing marked clinical signs of its presence owing to the fact that the cerebral cortex at this early age is not highly developed, the new-born child being more of a spinal than a cerebral animal. Also, the histories of the chronic cases of cerebral spastic paralysis were very suggestive, in that the large majority of babies were first-born, full-term boys delivered after a difficult labor with and without the use of instruments, and in whom the clinical signs, even when observed, were often no

more than a slight drowsiness, difficulty in nursing and an occasional muscular twitching, and so often ascribed to "nothing at all." The child having suffered from the difficult labor, such a condition might be expected and it would all "clear up." Fortunately, in the mild cases of small hemorrhage, frequently associated with no definite clinical signs at all, the natural means of absorption were undoubtedly often sufficient to "take care of" the hemorrhage, so that no supracortical residue of organized new tissue formation of the layer of clot remained to block the normal absorption of the cerebrospinal fluid; these patients became normal and remained so. Unfortunately, in those patients with more extensive hemorrhage, and in whom clinical signs during the first ten days after birth were usually noted, as indicated in the histories in this series of chronic cases—mild stupor, difficulty in nursing and occasional muscular twitching—the condition usually did "clear up" within the first two or four weeks, but only temporarily so, for after a period of several months of apparent normality these children began to exhibit, within the first and second years of age, the definite signs of physical impairment and mental retardation, the typical condition of cerebral spastic paralysis. Naturally, this later development of a chronic condition in an apparently normal child has been most puzzling and has been ascribed to numerous causes: lack of development, a former meningo-encephalitis, syphilis, heredity and other causes.

FINDINGS IN ONE HUNDRED CASES

Realizing that the ideal time for treatment of this traumatic condition of the new-born, just as in the cases of traumatic intracranial hemorrhage in adults with and without a fracture of the skull, is during the acute stage at the time of birth, during the first week, when the intracranial hemorrhage can be drained in fluid form and thus the danger of the later physical and mental impairments be lessened and even avoided, and not during the chronic stage—months and years later, when the cerebral cortex may have been or has been permanently damaged—and suspecting that this condition of intracranial hemorrhage of the new-born was occurring more frequently and much more commonly than had been conceived, owing to the paucity and even lack of the symptoms and signs at the time of birth, I obtained the permission in January, 1923, for performing a series of lumbar punctures on consecutive new-born children at the City Hospital, Welfare Island, New York City, through the courtesy of Drs. Wilbur Ward, F. A. Dorman and C. G. Child, Jr., in whose services the following observations have been recorded in 100 consecutive new-born babies.

It was, indeed, surprising to find free blood in varying amounts in the cerebrospinal fluid at lumbar puncture within from twelve to forty-eight hours after birth in nine of the 100 consecutive new-born babies; that is, in 9 per cent. With the exception of four cases, these nine births were apparently normal and the babies themselves appeared to be normal, there being no marked symptoms or signs of an intracranial lesion. The amount of blood varied from merely a reddish tinge of the cerebrospinal fluid in five cases to that of almost pure blood in four. In five other cases the cerebrospinal fluid was blood-streaked, either as it dripped from the needle or as it collected in the test tube; thus, this blood was due to the puncture itself, and an immediate second puncture, one lumbar interspace higher, revealing clear fluid, confirmed this belief. Therefore, these five babies were not included with the nine babies with bloodly cerebrospinal fluid. In not one case following these 100 lumbar punctures were any untoward effects on the baby to be observed—no rise of temperature, no cervical or spinal rigidity and no vomiting. The test of lumbar puncture itself on these new-born babies was simpler than the routine procedure of taking the blood, the essentials being a well-flexed spine in the horizontal position, a hypodermic needle instead of the large lumbar puncture needle, and, naturally, no anesthesia. In only eight cases was the failure of a "dry tap" recorded. In each case in which free blood was found in the cerebrospinal fluid and under varying degrees of increased pressure, as accurately recorded by the spinal mercurial manometer, the cerebrospinal fluid was slowly removed until the pressure descended to the lowest level within normal limits (4 mm.), and a second test, twelve hours later, was made, both to confirm the presence of blood of the first test and also to drain away still more of the free blood until the cerebrospinal fluid should become clear and under a pressure within normal limits (not over 8 mm.). In one case, four lumbar punctures for spinal drainage at intervals of twelve hours each were necessary in order to permit the cerebrospinal fluid to become clear and under normal pressure; in the five babies having blood-tinged cerebrospinal fluid, three lumbar punctures were sufficient for four of them, and only two punctures for the other child, in order for the cerebrospinal fluid to become clear and under normal pressure.

In four babies the intracranial hemorrhage was of large amount, a 7 months' baby revealing, at necropsy, a right ventricular hemorrhage and another baby having subarachnoid hemorrhage with extensive cerebral edema. Both of these babies died suddenly within thirty-six hours after birth, and in them the lumbar puncture revealed a bloody cerebrospinal fluid under high pressure. (Early repeated lumbar punctures for spinal drainage, or even a cranial decompression and drainage, might have permitted the patient in the latter case of subarachnoid hemorrhage to recover.) It was also impressive to observe in the other two patients surviving with extensive intracranial hemorrhage, only the so-called mild clinical signs, drowsiness, refusal to nurse and no muscular twitchings. In three of the cases of intracranial hemorrhage of less degree in this series, there were present no marked demonstrable signs indicative of a serious intracranial lesion; apparently the amount of hemorrhage was so slight that possibly the natural means of absorption alone, even if the spinal drainage by repeated lumbar punctures had not been used, would have sufficed to permit the complete absorption of the free blood, and thus to assure the future normality of the child. Undoubtedly the repeated lumbar punctures for spinal drainage aided these natural means of absorption, and in this manner their recovery was facilitated, both as to life and as to future normality. The fontanels were flush in five cases, bulging and tense in two, and apparently relaxed and normal in two, and the increased intracranial pressure, as registered by the spinal mercurial manometer, varied from 16 and 12 mm. in the two patients dying to 10 mm. in the babies having flush fontanels, and to 8 mm. in the two babies with relaxed fontanels. The coagulation time of the blood was taken in each of the nine babies in whom free blood was found in

the cerebrospinal fluid, and in each case the coagulation time was within the normal limits.

It is interesting to note in this series of 100 consecutive new-born babies, in 9 per cent. of whom free blood was found in the cerebrospinal fluid, that fifty-one were boys and forty-five were first children, and that only fifteen labors were recorded as being prolonged and difficult, and that instruments of the low forceps type had been applied in only ten of them, and no intracranial hemorrhage had resulted in these particular instrumental deliveries. The two deaths from intracranial hemorrhage with necropsy were described by the obstetrician as being "normal." The remaining labors, with the exception of three having the cord about the neck, were considered as being normal with no complications. There were two pairs of normal twins and only one case of brachial plexus injury. Two babies were recorded as being "jaundiced." One baby developed slight twitchings of the hands and of the legs ten hours after birth, but a lumbar puncture disclosed clear cerebrospinal fluid under normal pressure, so that a possible intracranial hemorrhage could be practically excluded as being an etiologic factor; the muscular twitches disappeared within six hours after the lumbar puncture and did not return. (An early lumbar puncture within the first few days after birth can thus be utilized in many doubtful cases to confirm or disprove any clinical signs pointing to an intracranial hemorrhage at the time of birth—a very valuable method to the obstetrician, especially after severe, difficult labors when an intracranial lesion may be feared and even suspected.)

In adults, the normal pressure of the cerebrospinal fluid, as measured by the spinal mercurial manometer at lumbar puncture, is considered as being from 6 to 8 mm., and it was expected that in the new-born babies of this series, the intracranial pressure would be definitely lower on account of the open fontanels and the normal elasticity of the dura at this early age. It was surprising, therefore, to record almost a uniform pressure of 8 mm. of mercury within the first forty-eight hours after birth, and it was only after lumbar punctures were performed at the date of discharge, two weeks later, that the normal pressure for the babies in this series was apparently from 3 to 5 mm.; whether this temporary mild cerebral edema at the time of birth is a protective mechanism of Nature to lessen the danger of cerebral trauma, or is a result of the cranial molding and possibly mild trauma incidental to parturition, can only be mentioned.

IMPORTANCE OF EARLY LUMBAR PUNCTURE

Acute intracranial hemorrhage and cerebral edema of varying amounts in the new-born occur rather frequently. The simple method of lumbar puncture within the first week after birth may be used to demonstrate the presence or not of free blood in the cerebrospinal fluid; if present, then the natural means of its absorption can be aided by the repeated lumbar punctures of spinal drainage; and, if not present, then an intracranial hemorrhagic lesion can be practically excluded. The mildness and almost lack of clinical symptoms and signs, even in the presence of extensive intracranial hemorrhage and cerebral edema in the new-born, emphasize the advisability and importance of an early lumbar puncture, both as a diagnostic and as a therapeutic measure, in any suspected case of an intracranial lesion in the new-born, irrespective of the type of labor. This early recognition of an intracranial hemorrhage in the new-born and the appropriate treatment will thus tend to lessen that large chronic group of physically impaired and mentally retarded children.

I am deeply indebted to my associate, Dr. G. E. Espejo who performed all of the lumbar punctures in this series, registering the pressure and examining the cerebrospinal fluid in the laboratory; also the making of the coagulation blood tests on those children in whom an intracranial hemorrhage of varying degree had occurred.

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CARE OF THE NEW-BORN IN THE FIRST WEEKS OF LIFE*

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MINNEAPOLIS

In this paper I shall attempt to consider only the more important aspects of the care of the new-born in the first few weeks of life. No attempt will be made to cover the entire ground, but stress will be placed chiefly on subjects which have not been sufficiently emphasized in the past, such as physical care of the new-born, congenital defects and injuries, infection, hemorrhage and feeding.

The physical care includes proper clothing, bathing, external temperature and the administration of fluids.

New-born infants are apt to be kept in rooms in which too high a temperature is maintained. They frequently respond to too high an external temperature with fever, just as they respond with a subnormal temperature if they become chilled. Many an obscure fever in the new-born would be diagnosed if the room temperature were more carefully observed. The same applies to the clothing of the infant; chilling must be prevented, but too much clothing makes the baby irritable, and if it is at all thermolabile, it reacts with a fever.

Ramsey advises that, in place of the usual bath, an oil rub be used; his point is well taken, especially for the debilitated infant during the first twenty-four hours.

For the first four days, before the mother's breast milk has begun to flow freely, large amounts of fluid in some form must be administered. If this is not done, the baby may develop a fever, owing to dehydration.

CONGENITAL DEFECTS

Only such congenital defects as demand early treatment will be considered. These include cleft palate, Erb's paralysis and clubfoot. With Erb's paralysis, for the first twenty-four hours the injured arm should be held in a cast or splint over the head, with the humerus at right angles to the body and the forearm at right angles to the humerus, so that all strain may be taken off the deltoid muscle. When the nerves regenerate, the muscle will then be in good condition to function. In order to get the best results, clubfoot should be treated as soon as possible after birth. If the baby's condition permits, treatment for harelip and cleft palate should begin within ten days after birth.

Our modern aseptic technic has made cord infections less important than formerly, and the general prophylactic use of silver preparations has done the same for gonorrheal ophthalmia.

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Respiratory infections, on the other hand, are becoming increasingly important. The mother or attendant suffering with acute respiratory infection should be required to wear a gauze mask when handling the baby. Pneumonia, meningitis, otitis and pyelitis in the new-born can often be traced to such a source.

Pemphigus neonatorum has lost none of its dangers. Its high contagiousness means that, in a ward for new-born infants, the slightest suspicion of this disease should cause the isolation of the suspected infant.

Open tuberculosis in the mother is the one sufficient reason against maternal nursing. She not only should not nurse the baby, but, if at all possible, the baby should be separated entirely from the mother, since tuberculosis in the new-born is uniformly fatal.

Congenital syphilis is a very deceptive disease. When the baby is born with clinical evidence of the disease and there is a positive Wassermann reaction, the course to pursue is simple. When, however, as is frequently the case, the infant is born apparently healthy and with a negative Wassermann reaction, but, nevertheless, is in the incubation period of the disease, diagnosis is rendered more difficult, and early treatment is often deferred. In an infant under 3 months of age, a negative Wassermann reaction does not exclude syphilis; but over that age, if carefully and properly performed, it is fairly reliable. In the young infant, when there is any suspicion of syphilis, treatment should be instituted at once until time has made certain the diagnosis.

HEMORRHAGE

Hemorrhage of the new-born is much more common than was formerly supposed. Warwick [1] summarizes thus a necropsy report on hemorrhage in the new-born:

1. Cerebral hemorrhage of the new-born is frequently found, occurring in 50 per cent. of thirty-six fatal cases of young infants at the University Hospital.

2. The condition is brought about by trauma in normal or rapid deliveries, by congestion or asphyxiation in slow deliveries, or by disease of the child itself.

3. The so-called "hemorrhagic disease of the new-born" is a much neglected but very important cause of cerebral hemorrhage in infants, occurring in 44 per cent. of the deaths of our series.

4. Forceps deliveries, advanced age of the primipara mother and syphilis probably do not play as important a rôle in the etiology of this condition as was formerly supposed.

In connection with hemorrhagic disease of the new-born, Rodda [2] has shown that the coagulation and bleeding time are prolonged, and has suggested this simple method for determining the coagulation time:

The apparatus required consists of a spring lance (a simple scalpel will suffice), two 1½ inch watch glasses and No. 6 lead shot, all of which are easily obtained and transported. Glass and shot should be cleaned, preferably by washing with soap and water, followed by alcohol and ether. Needless to say, the lance should be sterile, which implies freedom from old blood. The heel of the infant is sponged with ether, a puncture is made with the lance blade set (about 0.5 cm.) to produce a free flow of blood without the slightest pressure. A clean watch glass containing a No. 6 shot receives the second drop of blood. A second watch glass is inverted over the first. The watch glasses are gently tilted every thirty seconds until the shot no longer rolls, but is fixed in the clot. The end-result is sharply defined; the shot is firmly embedded, so that the glass may be inverted without dislodgment of the shot.

1. Warwick, Margaret: Cerebral Hemorrhage of the New-Born, Am. J. M. Sc. **158**: 95 (July) 1919.
2. Rodda, F. C.: Studies with a New Method for Determining the Coagulation Time of the Blood in the New Born, Am. J. Dis. Child. 19: 268 (April) 1920.

Rodda's work has greatly increased our ability to cope with these cases. Every new-born infant presenting symptoms should have its bleeding and coagulation time tested. Better than this, a prophylactic coagulation test should be done every day for the first three days. The loss of coagulation power usually begins on the second or third day, but may begin during the first six hours of life, and, if no treatment is given, it may last a week or ten days. If the coagulation time is increased, treatment should be instituted at once, even with the absence of any symptoms of hemorrhage. The accepted treatment brings the coagulation back to normal in a comparatively short time, and is so simple that even under the most primitive conditions it can be employed. It consists in injecting, subcutaneously, from 20 to 35 c.c. of whole human blood, once, twice or three times a day, depending on the severity of the symptoms. When given subcutaneously, the blood, of course, need not be grouped. When, as is frequently the case, the hemorrhage is cerebral, the symptoms may be very indefinite; and, unless one has this condition in mind, the diagnosis may be overlooked. Many death certificates signed congenital debility and other meaningless diagnoses are in reality undiagnosed cerebral hemorrhages. Some of these cerebral hemorrhages are due to blood changes which come under the heading of hemorrhagic disease of the new-born; others are due to trauma from either forceps or normal deliveries, or may be due to asphyxia of slow deliveries. In many cases, the hemorrhage is due to a combination of trauma and loss of coagulation power. This can be more readily seen in external trauma, such as forceps or circumcision wounds, in which the hemorrhage may stop entirely for several days, only to begin again as the coagulation time increases.

The common practice of circumcision in the first week of life is undesirable from two standpoints: (1) from the frequent danger of hemorrhage due to increased coagulation time, and (2) because in most infants the normal adhesions of the prepuce at birth can gradually be broken during the early months of life, doing away with the necessity for operation.

The symptoms of brain hemorrhage are often very elusive. Intermittent cyanosis, twitchings, frank convulsions, collapse and cloudy sensorium are the most common symptoms, but any indefinite symptom which cannot be explained on other grounds should lead to the suspicion of brain hemorrhage. If the coagulation time is increased, blood should be injected at once, and lumbar puncture performed, often with the withdrawal of boody fluid, an operation which relieves the pressure. If after several days there is no improvement in the symptoms, even though the coagulation time is returning to normal, decompression must be seriously considered. I believe that many cases of spastic paralysis, mental deficiency and epilepsy might be avoided if this operation were more frequently performed. It is a comparatively simple operation, and the mortality is low.

The recognition of hemorrhage of the new-born, especially cerebral hemorrhage, is a most neglected phase of the care of the new-born, and one on which too much emphasis cannot be placed.

FEEDING

Infant feeding divides with hemorrhage the honor of being the most important factor in neonatal mortality. More than 95 per cent. of babies can and should

be breast fed, and the care received during the first two weeks of life often determines whether or not the baby will be nursed. The late Dr. Sedgwick once remarked that "the baby is the by-product of obstetrics." To the obstetrician, the mother is the first consideration, and his comparatively slight interest in the infant has caused many large teaching hospitals to place the new-born infants in the care of the pediatrician.

The baby should be put to the breast within six hours after birth, and then regularly every four hours, five or six times a day, until the milk begins to flow freely. The practice introduced by Schick of feeding the infant large amounts of carbohydrate solution and other artificial mixtures to do away with the initial weight loss is permissible in a large, well organized hospital; but under other circumstances it may be very undesirable, for it may be the entering wedge for the complete weaning of the baby. A better general practice is to give the baby large quantities of water, and if at the end of a week there is not sufficient breast milk, small amounts of artificial food may be given. However, before this is done, it is usually wiser to nurse both breasts, instead of one; to nurse every three hours, instead of four, and to begin the manual expression of the mother's breasts after each nursing. The religious adherence to the four-hour schedule in the face of a shortage of breast milk is a serious mistake. I am one of the firmest adherents of the four-hour schedule when there is a normal supply of breast milk, but otherwise a temporary placing on the three-hour schedule is frequently of great benefit. One of the most frequent causes of an insufficient supply of breast milk is the fact that the infant's sucking reflex is poorly developed, and, as a consequence, the mother's breasts are not thoroughly emptied. Manual expression of the breasts after each nursing stimulates the supply. The technic is as follows: The breast is grasped firmly between the thumb and index finger just back of the areola, the fingers pressed firmly together, and then, with a sudden "stripping motion" toward the nipple, the milk is ejected in a stream. The method requires practice until a good technic is developed. The increase in the breast milk by this method is often surprising. If, in spite of these methods, artificial food is necessary, it should be complemented, that is, given after each nursing, instead of replacing a nursing, and should be given in minimal amounts. If given ad libitum, the baby soon stops nursing completely to wait for the easier bottle. The quantity of the artificial food given is more important than the kind; the simple milk dilutions with carbohydrate additions, the Holland buttermilk formula or casein milk may be used.

The method of manual expression is also of great value in malformations of the breasts or nipples, as well as in acute mastitis and abscesses of the breast. In malformation, if necessary, the entire breast milk supply may be expressed for the baby for a period of nine months (personal case). In acute conditions of the breast, the secretion of milk may be kept up until the inflammatory process has subsided. In acute generalized disease of the mother, such as the exanthems, in which it may at times be inadvisable to have the baby nursed, the milk may be expressed in this manner and fed to the baby.

It is suprising in how many otherwise efficient hospitals these simple methods are neglected, and in an offhand manner the babies are placed on a bottle because the mother has not enough breast milk.

It should be obvious from the foregoing statement that the interest in the health of the infant should not cease with the first few weeks of life, as is too frequently the case. With our increased knowledge of pediatrics, and especially of infant feeding, the continued health of the infant demands that as a prophylactic measure the baby be seen by a physician at least once a month during the first year of life.

The purpose of this paper has been served if it brings to the obstetrician the realization that the new-born infant has a claim on his time and skill equal to that of the mother.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. SHARPE AND HUENEKENS

DR. HENRY F. HELMHOLZ, Rochester, Minn.: Dr. Sharpe's paper is of great importance because it suggests a method of preventing disease. Anything that we can do to reduce the number of cerebral palsies is clear gain. When they have reached the chronic stage there is practically nothing that can be done for them in a medical way. The matter of routine lumbar puncture in cases of suspected cerebral hemorrhage is of great importance. I disagree with him only in a minor point: that the symptomatology of cerebral hemorrhage is a very difficult one and that many conditions may give rise to exactly the same symptomatology described but in which at necropsy no cerebral hemorrhage is found. In one other matter, too, I would emphasize the fact that these hemorrhages occur not only on the surface but also in the depth of the cerebral tissues. I think that this is a point that is frequently overlooked and, unfortunately, in my experience, is more frequent than is usually described. Unquestionably, the milder hemorhages are, as a rule, superficial, but even in this connection it is well to realize that hemorrhage at the time of birth, due to rupture of a small vessel, may light up again because of the hemorrhagic tendency in the new-born. During the last year we have made it a routine procedure, in cases of more severe labor and forceps delivery, to give infants at the time of birth a prophylactic injection of blood. The father is usually available, and it can be carried out very simply. It seems to me that the slight hemorrhage occurring immediately after birth can be controlled in this way and should prevent the lighting up of the hemorrhage due to the hemorrhagic tendency that one sees so frequently. With regard to the pathology and possible etiology of pressure or encephalitis, it has been my experience that there is usually considerable involvement of the brain substance, and that exceptionally there may be an element of pressure. Dr. Huenekens has so completely covered the field that it seems useless to attempt to say anything more than just emphasize again the three most essential points: the temperature, guarding the infant against infection, and breast feeding.

DR. EDWARD L. CORNELL, Chicago: I want to call attention to the importance of brain hemorrhage following rapid normal delivery. I think too many of us overlook the fact that a baby delivered less than two hours after labor is started is frequently subject to brain hemorrhage. Within the last three years I have had three or four cases following short deliveries, one patient having the baby in thirty-five minutes after the first pain. The baby died on the fourth day, and at the necropsy hemorrhage was present throughout the brain, even involving the lower brain structures. For the last year and a half it has been my custom to use some form of hemostatic preparation as a prophylactic measure to combat, if possible, the impending hemorrhage following rapid normal deliveries, a very difficult forceps delivery or long drawn out labor cases. Regarding circumcision early in the baby's life, I feel that Dr. Huenekens' remarks are necessarily true. I have used circumcision on the eighth or ninth day for the last ten years, and, with few exceptions, have had no trouble with hemorrhage afterward. We favor the four hour feeding and have used it since 1917 at the Chicago Lying-in Hospital, with very

satisfactory results save for a few exceptions. I agree that we should use three hour feeding in cases of shortage of milk. I wish to call attention to the electric breast pump. This pump was developed by Dr. Abt. We are using it with great satisfaction in cases of shortage of milk or engorged breasts.

DR. ERNEST SACHS, St. Louis: I agree with Dr. Huenekens and Dr. Sharpe that this question of hemorrhage is a very vital one. I agree with Dr. Huenekens in contradistinction to what Dr. Sharpe has said that the diagnosis is extremely difficult. I have had the good fortune in the last year to see all such cases in the pediatric service of Dr. Marriott, and we have all been greatly troubled in making the diagnosis, believing that we had a birth hemorrhage when none was present. I wish to protest strongly against what Dr. Sharpe has advocated for many years, namely, that increase in the spinal fluid was evidence of disturbance or increase in the intracranial pressure. Through the kindness of Dr. Marriott, I had the opportunity of having the spinal pressure measured as a matter of routine in a large number of cases in which spinal puncture was done for diagnostic purposes, and found that the pressure varied anywhere from 4 to 60 mm. None of these cases were traumatic or tumor cases. If this is so, then this argument that a rise in the intraspinal pressure is per se evidence of increased intracranial pressure must fall.

DR. WILLIAM SHARPE, New York: In this series of 100 consecutive new-born children it was, indeed, frequent to find a mild frontal and intracranial hemorrhage, as was indicated by bloody cerebrospinal fluid. I agree that, if we attempt to diagnose extensive intracranial hemorrhage or intracranial hemorrhage of varying degree, unless we use early lumbar puncture before the blood clots, it is very difficult to diagnose intracranial hemorrhage. I, too, feel that in these cases intracranial hemorrhage occurs much more frequently than we have any conception of, and that the only method of diagnosing extreme cases of intracranial hemorrhage is the lumbar puncture. I agree with Dr. Helmholz that the signs produced by mild intracranial hemorrhage may be absent entirely or, at least, not recognized, and it is only by means of lumbar puncture that such a diagnosis can be made. By repeated lumbar puncture producing drainage it is possible to lessen the number of spinal palsy cases later in life. In these nine cases in which we found blood in the cerebrospinal fluid, forceps had not been used and labor was in one case a breech with version and extraction, and in one case the cord was about the neck, but otherwise the labors were normal, so that intracranial hemorrhage can occur without labor difficulty. The coagulation time was taken in each one of the nine cases in which blood was found in the cerebrospinal fluid, and it was normal. As to the so-called normal pressure in new-born babies, in adults a pressure of from 6 to 8 mm. is considered normal, but it may be as high as 10. In children with open fontanel and with elasticity of the dura, the pressure was universally 7 or 8, rarely above that. Then we were considering that 6 was normal pressure for new-born babies. When we again made the test at the time they left the hospital, three or four weeks later, the pressure was usually 4, sometimes 5. Whether more cerebrospinal fluid escapes at the time of birth to protect the brain or whether this cerebrospinal edema is the result of trauma at birth, I do not know.

DR. E. J. HUENEKENS, Minneapolis: I agree with Dr. Sharpe on the advisability of frequent lumbar puncture in cases of cerebral hemorrhage, but I wish to emphasize more than he has the necessity of ascertaining the coagulation time. I am surprised that in his nine cases he found no increase in coagulation time. Dr. Warwick found that intracranial hemorrhage occurred in 44 per cent. of deaths in a large series, and in all of these 44 per cent. there was an increase in the coagulation time. That is an important point in the treatment of these cases.

Strain and Acute Respiratory Disease.—There can be no doubt that with acute respiratory disease strain makes up a team of immediate etiologic factors that is responsible for more individual outbreaks of tuberculosis than any other single cause.—Allen K. Krause.

THE PROBLEM OF DIAGNOSIS IN SURGICAL LESIONS OF THE RIGHT ILIAC REGION *

A. B. COOKE, M.D.
LOS ANGELES

In some sense, most intra-abdominal operations are exploratory.

After every diagnostic resource has been exhausted, it happens with disconcerting frequency that conditions are encountered at operation of a different and far more serious character than was anticipated.

This is especially true in lesions of the right iliac fossa, in which the appendix so completely dominates the diagnostic picture. As a matter of fact, fully 90 per cent. of the surgical lesions of this region do originate in the appendix. But the remainder, whether 10 or only 1 per cent., constitute too large and too important a clinical group to be ignored or lightly considered.

We are not concerned so much with diagnostic error as with the possible consequences of diagnostic error; for the prime object of diagnosis, when all is said, is the cure of disease, not the scientific satisfaction of solving an obscure problem. In the class of cases now under consideration, life is threatened and time for refinement of diagnosis is not always available. It is often imperative to face emergencies by operating first, determining the exact nature of the trouble incidentally, or afterward when the patient is safe. The alert clinician diagnoses acute surgical conditions of the abdomen as a call to action, be the disease what it may.

Enumeration of the extra-abdominal conditions alone which have been mistaken for appendicitis and treated by operation would make an interesting list, embracing such diverse maladies as pneumonia, tabes, sciatica and spinal caries. And practically every intra-abdominal lesion has furnished the occasion for similar misdirected enthusiasm.

But the class of cases to which attention is here particularly invited is that in which the lesion is really located in the right iliac region.

A series of recent cases in which the diagnosis of appendicitis proved to be incorrect or in some respect misleading has served to direct my attention very forcibly to this question. When first seen, each one of these cases presented every appearance of a typical acute attack, and delay for prolonged study seemed both unwise and unwarranted. In the light of the operative findings, it is quite evident that accurate differential diagnosis would not have been possible even had time for investigation been unlimited.

REPORT OF CASES

A brief report of several cases will serve both to illustrate and to illuminate the problem under discussion:

CASE 1.—Mrs. Y., aged 30, healthy and well nourished, for more than a year had suffered from recurrent attacks of pain in the right iliac region, which had been invariably diagnosed appendicitis. There being no improvement in this attack after twenty-four hours, I was called to attend her. The case seemed a typical one of simple acute appendicitis, presenting all the classical features of local rigidity, slight elevation of temperature, vomiting at intervals, and constipation. Pelvic examination was negative. Leukocytosis was

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14,000; polymorphonuclears, 82 per cent. Operation was refused. Twelve hours later, about 9 o'clock p. m., I was again called, when the patient consented to go to the hospital. Operation at 1 a. m. disclosed a normal appendix. About 6 inches from the ileocecal valve, the ileum presented a small, indurated mass with many dense adhesions about it. The intestine was twisted on itself so that almost complete obstruction had resulted. The indications were clear for resection. This was accordingly done, some 4 inches of the intestine being removed and end-to-end anastomosis with sutures effected. The condition proved to be inflammatory only. Complete recovery followed a rather stormy convalescence.

CASE 2.—Miss E. A., aged 25, healthy, had had a number of similar attacks during the previous two years. Clinical examination and laboratory findings were much like those of the preceding case. Here again operation was declined until increasing pain won consent twenty-four hours later. The trouble was found to be at the base of the appendix and involving the cecum as well, a large area of the latter being densely infiltrated and presenting numerous foci of suppuration and necrosis. Operation consisted of resection of approximately two thirds of the diseased cecum. Nothing less than this rather formidable procedure seemed to offer any promise of success in this particular case of appendicitis.

CASE 3.—J. C., a white man, aged 22, strong and healthy, had marked and typical symptoms of acute appendicitis, and the clinical diagnosis was corroborated by the laboratory findings. So definite were the evidences of localization at the usual site that an oblique, muscle-splitting incision was made. A careful search failed to reveal any pathologic changes in the vicinity, or any trace of either cecum or appendix. Not willing to admit in the presence of such positive symptoms that this could be another instance of "congenital absence" of those organs, I made a second incision through the rectus muscle at a higher level, and the truant structures were at once located. The ascending colon was very short, the freely mobile cecum looked upward and inward, and the highly inflamed appendix lay in contact with the gallbladder, with newly formed adhesions extending in all directions.

CASE 4.—D. S. M., a physican, aged 53, a personal friend, had been in bed several days suffering with a continuous and increasingly severe pain in the right iliac region. He had had several similar, but briefer and less painful, attacks during the past few years. The temperature was 101; pulse, 95. On palpation there was marked rigidity of the right rectus and pronounced tenderness about the region of McBurney's point. A well defined mass of firm consistency could be plainly outlined at the latter situation. There was a leukocytosis of 22,500, with 93 per cent. polymorphonuclears. The diagnosis of acute appendicitis and the necessity of immediate operation seemed equally clear, and the patient was sent to the hospital. The mass was delivered without difficulty, and proved to be a greatly thickened cecum with a distinct tumor as large as a medium sized fist occupying the whole of the space between the origin of the appendix and the ileocecal junction. The appendix was in no way involved. Pathologic change was definitely limited to the tumor, which presented numerous areas of necrosis, one of which extended well on to the ileum at its point of junction with the cecum. It was soon apparent that nothing less than a total excision of the cecum must be undertaken. This was done, an end-to-end anastomosis of the ileum to the ascending colon being made with sutures. The tumor proved to be a diverticulum of the cecum containing a firm, round fecalith approximately three-fourths inch (2 cm.) in diameter, in a mucous-lined pocket more than an inch from the lumen of the intestine.[1]

These four cases will suffice to indicate the diagnostic uncertainties and to emphasize the operative difficulties and complications that may be associated with the surgery of appendicitis. They are not mentioned as in any sense unique. Without especial effort, probably every experienced surgeon can recall similar instances that have occurred in his own experience.

1. This case has already been reported in detail: Cooke, A. B.: When Appendicitis is Not Appendicitis: A Case of Diverticulitis of the Cecum, J. A. M. A. 78: 578 (Feb. 25) 1922.

THE MODERN SURGICAL CRAZE

Now, what is it all about? Since, in the nature of things, absolute accuracy in diagnosis is impossible, why consume time by stressing the mistakes and failures? Because, as I conceive it, the question is one that vitally concerns this section and the good repute of surgery in general. As matters stand at present, the general practitioner, so far as relates to appendicitis, practically no longer exists. It has come to be the rule in most communities that the family physician who usually first sees these cases is himself both willing and eager to operate. Asked whether he does surgery he is apt to reply, "No, except in simple cases like appendicitis." The result is that the proportion of cases reaching the hands of the trained surgeon has gradually, but steadily, diminished until it is doubtful whether, taking the country as a whole, he now does as much as 50 per cent. of the appendicitis operations. That this is not a fanciful statement, the majority of surgeons whose experience has extended through the last two decades will be able to testify.

There must be some explanation of this condition of things. What is it? Primarily, of course, it is the unprecedented growth of what may be called the surgical craze. As promoting and encouraging this craze, two outstanding factors, each entirely worthy in itself, would appear to be of especial significance.

Promiscuous operating, notably for appendicitis, is largely an outgrowth of the last two decades. During the same period the hospital idea has been sown broadcast and has borne an amazing harvest. Whereas formerly only the cities were supplied, today every town of a thousand population boasts its hospital, which is open to the profession at large and in which the facilities for surgical work are free to all. In the cities, too, even the largest, hospitals exist in which no standard of skill or experience is applied to operators. Thus the widely prevalent desire to do surgery finds easy means of gratification.

The second conspicuous factor in the development of the modern surgical craze is the combined influence of the many schools of operative surgery and of the large open clinics. The former welcome all who apply, the only condition being the price of the course. The latter admit all comers with no questions asked and, apparently, no consideration given to their ability to observe intelligently or to profit by what may be observed.

Time does not permit elaboration of the foregoing. Nor, indeed, is it necessary. But I may be pardoned for stating in plain terms one truth which every one realizes for himself: There should be some minimum standard of fitness for every man who essays major surgery. In view of the utter impossibility of determining in advance the exact nature of the lesion and the operative requirements in all cases diagnosed "appendicitis," would it be in any sense unjust or unreasonable to require of every one who undertakes such operations that he should be competent to handle any condition that may be encountered? Sooner or later, in some way, some such reasonable requirement is certain to be established and enforced. How much better it would be if the profession would do this for itself, rather than remain apathetic and face an inevitable and more or less humiliating alternative.

No fixed standard of surgical skill is here contemplated or suggested. But surely every patient has the right to expect and demand that he be subjected to no avoidable hazard, however small.

Much of what I have said applies with equal force to the surgical lesions of all abdominal organs; indeed, to surgical lesions in general. Emergencies must, of course, be met as they arise, but always to the best interest of the patient. It is beyond dispute that best interest means the services of a trained surgeon in every instance in which it is possible to procure one.

I have no specific remedy to offer. The evil, already great, is steadily growing, in spite of the good work that has been accomplished by the Association through its Council on Medical Education and Hospitals, and by the American College of Surgeons. And unless effective appeal can be made to the individual conscience of the rank and file of the profession, I foresee a constantly waning influence, if not actual disaster, ahead. Already we are under attack from many insidious sources, and regulation in the form of antagonistic legislation is being proposed and enacted in many different states. We must have the confidence of the public, but we must also deserve it.

This desirable end will be promoted in proportion as we recognize and emphasize the basic truth that surgery exists for the patient, not the patient for surgery.

I am well aware that little credit and no glory can attach to the presentation of a paper on such a topic as this. My only excuse is that it has been so long and so studiously ignored. We all must have convictions on the subject. Let us give expression to them now.

SURGERY OF THE APPENDIX*

WILLIAM E. LOWER, M.D.
AND
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CLEVELAND

It is gratifying to note that the establishment of appendicitis as a distinct disease entity was an American achievement. We do not intend to review the enormous literature pertaining to diagnosis and treatment which has developed since the primary publications of Reginald Fitz of Boston, in 1886, and such other earlier writers on this subject as Stimson, McBurney and Bull, but rather to point attention to certain problems that still remain. There has been great progress in the treatment of appendicitis and peritonitis. The increasing readiness of the public to submit to the operation which they have been taught to believe is attended with little danger, and the simplicity of the operation itself, have perhaps lulled the medical profession into a kind of false security. That this is the case is indicated by the fact that while, for a number of years, at every session of this Association the subject of appendicitis was discussed and various new methods of treatment were presented, defended and assailed, more recently papers on this topic have become fewer, and the general impression has seemed to prevail that the appendicitis problem has been settled. In a recent paper, Carr of London stated that, in spite of all advances in diagnosis and treatment, the death rate from appendicitis in England and Wales tends to increase rather than diminish, and now amounts to about 2,500 deaths a year. We feel confident that were figures available, we should find that the death rate from appendicitis in the United States is not diminishing.

While appendicitis is not, so far as we now know, a preventable disease, the possibility of cure if the patient is seen early and properly treated should keep the mortality rate at a low figure. The mortality rate of operations for acute appendicitis ranges from 3 to 6 per cent., and in some cases to even a higher figure; and while the end-results of operations for acute appendicitis among those who survive are almost uniformly good, the percentage of unrelieved patients after operation for chronic appendicitis is alarmingly high. Thus, Deaver and Rodvin,[1] in reporting the end-results in 226 cases, report 9.7 per cent. as only partially relieved and 7.07 per cent. as unrelieved. Gibson,[2] reporting 426 cases, reports 15.2 per cent. as partially relieved, and 23.9 per cent. as unrelieved. Such figures as these may well give us pause and force us to an intensive study of the factors that underlie such figures.

The high operative mortality in cases of acute appendicitis, and the postoperative morbidity in cases of chronic appendicitis, are in our opinion due in large measure to the common belief that in each case the only proper procedure is the removal of the appendix. When the patient with acute appendicitis comes to operation, the removal of the appendix alone does not correct the damage already done by the attendant peritonitis, and there should be a more general appreciation on the part both of the laity and of the profession that acute appendicitis with attendant peritonitis is not a localized but a systemic disease, to which the appropriate after-treatment as well as the appropriate operative procedures themselves must be applied. The morbidity after operations for chronic appendicitis in the majority of cases is due to incorrect diagnosis. Correct diagnosis in cases of supposedly chronic appendicitis and the proper handling of acute cases will lower the mortality rate of the latter condition and the morbidity rate of the former.

In contradistinction to these discouraging factors in the problem, it is pleasant to note a more encouraging condition. With the increased tendency of the public to consult a physician for chronic as well as for acute disturbances, with their diminished reluctance to submit to surgical operation and, on the part of the surgeon, with increasing attention to the importance of the appendix as a focus of infection which may be responsible for many types of general functional disorders, our statistics are showing what appears to be a decreasing number of acute appendicitis cases, and a correspondingly increasing number of operations for chronic appendicitis. Our earlier series of operations for appendicitis shows that 60 per cent. were for acute and 40 per cent. for chronic appendicitis. Our series for the last two years shows that only 28 per cent. of the total number were for acute appendicitis, while 72 per cent. were for chronic appendicitis.

The appropriate treatment of severe acute cases, which includes faithful application of the Ochsner treatment before operation, the Fowler position after operation, plus the Ochsner treatment, plus the Alonzo Clarke treatment for peritonitis, plus large hot packs over the abdomen, plus hypodermoclysis, reduces the

* Read before the Section on Surgery, General and Abdominal, at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

1. Deaver, J. B., and Rodvin, I. S.: End-Results of Five Hundred Cases of Chronic Appendicitis, Arch. Surg. **6**: 31-40 (Jan.) 1923.
2. Gibson, C. L.: Results of Operations for Chronic Appendicitis, Am. J. M. Sc. **159**: 654-663, 1920.

mortality rate to a minimum. Nevertheless, we still too often hear it said that all these methods have been applied without avail. Inquiry, however, will usually elicit the fact that the foregoing routine has not been completely followed; putting a few pillows under the head and shoulders does not put the patient into the Fowler position; the administration of small particles of ice in lieu of water is not the Ochsner treatment; morphin in small doses is not the Alonzo Clarke treatment, and small, warm pieces of gauze are not large hot packs. The full treatment must be rigidly applied to get the best results. In acute appendicitis, we would emphasize our own adherence to the procedures outlined above and to Crile's principle of confining the primary operative procedure to incision and drainage only, if the appendix is not readily accessible, the removal of the appendix and such other exploration as may be advisable being deferred until the acute state is past. Since the adoption of this combination of protective procedures, our mortality rate in acute cases has been reduced to 3.1 per cent. In doubtful cases, especially in women and sometimes in children, we prefer an incision through the right linea semilunaris as offering the easiest opening for a complete investigation of the lower abdomen. Through this incision it is possible to get sufficient exposure to remove any of the female pelvic organs that may be found diseased, and the danger of hernia is small, if no drainage is used. In general, it should be emphasized that the Ochsner treatment was not designed for cases in which all conditions are favorable for immediate operation, but rather for those severe fulminating cases in which there is danger that the risk will be increased by immediate operation—especially by a search for the appendix.

As for chronic appendicitis, the difficulty has been the proneness on the part of the profession to consider that pain in the right side and the consent of the patient are sufficient indications for the removal of the appendix. The diagnosis of chronic appendicitis is by no means the simple problem that it has been considered in the past, and the conditions that may simulate it are many.

It is not my purpose to make extended reference to the many conditions that are simulated by appendicitis, or to those the symptoms of which suggest appendicitis, but rather to confine myself to a brief discussion of certain uncertainties in diagnosis which have been experienced by my associates and myself.

It is generally recognized that, if an abdominal pain localizing in the right lower quadrant is sudden in its onset and severe, is accompanied by rigidity of the abdominal wall, tenderness on pressure over the appendix, symptoms of obstruction with vomiting and nausea, rise in temperature, etc., together with a history of previous attacks, a diagnosis of appendicitis may usually be made with a high degree of certainty. But many cases of acute appendicitis are not as clear cut as this, and cases of chronic appendicitis are often dependent on a history of previous attacks and localized tenderness with hyperesthesia. Consequently, in many cases diagnosed as appendicitis, operation all too often reveals a perfectly normal and healthy appendix. A very careful differential diagnosis is imperative in all cases, and it is necessary to bear in mind not only that apparent cases of appendicitis may be in reality diseases of other organs of the abdominal cavity, but also that some diseases thought to be those of other organs may be traceable to a diseased appendix.

DIFFERENTIAL DIAGNOSIS

Thus, in the experience of our associates and ourselves, in certain cases which before operation had been diagnosed as gallstones, catarrhal jaundice, gastric ulcer, indigestion, ovarian tumor, salpingitis and psoas abscess, at operation, the condition was found to be appendicitis. That these are by no means isolated experiences is shown by the extended literature on this phase of the appendicitis problem. It would seem well, therefore, to devote the remainder of this discussion to a presentation of certain points in differential diagnosis based primarily on our own experience.

While the presence of abdominal pain alone, even when localizing in the right iliac region, immediately suggests appendicitis, it is not conclusive evidence of appendicitis. Other organs, either by their position in this region or by referred pain from some other region, may cause pain at this point, and the presence of such diseases must first be ruled out. Thus, in our army experience it frequently happened that a right sided pain strongly suggesting appendicitis followed an attack of mumps—the temporary appendicular inflammation being followed by an involvement of the testes.

The pain from gastric or duodenal ulcer may be referred to the lower right quadrant; it is usually more intense than appendicular pain, however, and, unlike appendicitis, the intervals of freedom from pain are measured by hours instead of by months. Also in appendicitis the return to health between attacks is not as complete. Vomiting in appendicitis does not afford the relief given by vomiting in cases of duodenal ulcer. Moreover, the vomiting of appendicitis occurs only once or twice, in contradistinction to the persistent vomiting of certain other conditions.

The presence of abdominal pain in the very early stages of pneumonia, particularly in children, may simulate appendicitis, especially when the thoracic signs are absent, as they sometimes are, for twenty-four hours, and in such cases laparotomies have been made to the surgeon's discomfiture. An important diagnostic point is the fact that in pneumonia only the skin is hypersensitive—there is no pain on deep pressure. The leukocyte count will be found of aid in such cases; for, whereas in pneumonia the count may run as high as 30,000, it will seldom be found higher than from 15,000 to 20,000 in appendicitis. The importance of the leukocyte count in the differential diagnosis is emphasized also by the occurrence of symptoms strongly suggesting appendicitis after antityphoid inoculations. Many such cases were seen in army camps, the differential diagnosis being established by the low leukocyte count—4,000 or 5,000 in most cases. It was this low count in certain cases in which the diagnosis of appendicitis appeared certain that called our attention to this occasional occurrence.

The fact that acute appendicitis occurs more frequently in men than in women, and chronic appendicitis more frequently in women than in men, is emphasized by finding in one series of cases of appendicitis that among the acute cases 60 per cent. were males and 40 per cent. were females, while among the chronic cases these percentages were almost exactly reversed, 36 per cent. being males and 64 per cent. females. Such figures as these suggest more than a possibility that among the women in the latter series the symptoms were caused by the disease of some part other than the appendix—one of the generative organs, or the kidney or ureter on that side. It is common experience that

disturbances of the latter organs frequently cause right-sided pain which, in a too hasty examination, may appear to be caused by an inflamed appendix. Diseases of the urinary organs may generally be ruled out by roentgen-ray examination.

Acute pyelitis may be mistaken for appendicitis at first, but further examination will usually show a higher temperature than that usually found in appendicitis, laxity of abdominal muscles and pus or bacteria in the urine, as against rigidity of the abdominal muscles, and the normal urine found in appendicitis.

COMMENT

This brief discussion, which is by no means considered as inclusive, is offered merely to emphasize the point that in cases of suspected chronic appendicitis there is no excuse for a hasty operation, for in such a case sufficient time may safely be taken to rule out the possibility of disease of another organ or part. Time for the establishment of the diagnosis in the first place will save many a patient from the unrelieved symptoms, prolonged morbidity and possible later operation which now occur too frequently. On the other hand, not only do diseases of other organs simulate appendicitis, but not all cases of a diseased appendix are manifested by the usual appendicular symptoms, and therefore may be diagnosed as diseases of other abdominal organs.

Appendicitis may be the cause of hematuria; the kidney may be indirectly affected by the general systemic invasion resulting from appendicitis, or the kidney, ureter and bladder may be directly involved, the inflammation extending directly from the appendix.

We have found that the diagnosis of appendicitis in infants or small children may be aided by the use of scopolamin-morphin anesthesia, when pressure over the appendix will elicit a muscle spasm.

It appears to us that all of us have neglected to too great an extent the importance of applying in these cases all of the diagnostic aids at our command. The resources of the clinical laboratory should be used to the utmost; analyses of the blood and of the urine, both chemical and microscopic, may point the way in a doubtful case; the roentgen ray in many cases may not only demonstrate the presence or absence of disease in other organs, stones in the gallbladder, kidney stones, carcinoma of the stomach and intestine, etc., but also, as Lichty [3] has emphasized, may be of importance in localizing tenderness, vizualizing the appendix, and showing fixation, position, kinking of angulation, constriction, abnormal retention, and an incompetent ileocecal valve.

These notes are based on the experience of our associates and ourselves in 6,187 operations for appendicitis, among which 2,067 were for acute appendicitis and 3,068 for chronic appendicitis. In 173 cases the appendicitis was subacute and in 885 cases the appendectomy was incidental, i. e., was performed in the course of a laparotomy for another primary condition; in each such case, however, the appendix gave evidence of a preceding lesion.

In our earlier series, the mortality rate for acute appendicitis was 4.4 per cent., and for chronic appendicitis, 0.8 per cent. In our later series, our mortality rate has been 3.1 per cent. for acute, and 0.2 per cent. for chronic, appendicitis.

3. Lichty, J. A.: Chronic Appendicitis, J. A. M. A. 79: 887 (Sept. 9) 1922.

CONCLUSIONS

1. The mortality rate in acute appendicitis is still too high.
2. The incidence of errors in operations for chronic appendicitis is too great.
3. More stress should be laid on the treatment of the attendant peritonitis in acute cases and less on the mere removal of the appendix.
4. Greater care in diagnosis of the chronic cases is essential.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. COOKE, AND LOWER AND JONES

DR. A. J. OCHSNER, Chicago: I agree fully with all of Dr. Lower's conclusions and with what he said about the differential diagnosis and the importance of a very careful and extensive examination in all the chronic cases. In the acute cases there is almost no doubt that an operation is indicated which will determine the correct diagnosis. In these cases the time lost in long drawn out examination will do the patient very much more harm than good. Moreover, in the acute cases violent examination is contraindicated. Some surgeons naturally are violent; they have a rough touch, and cannot feel a thing until they force their fingers half way through the patient's abdomen. That type of physical examination is very bad for the patient, especially in acute cases. The examination should be exceedingly gentle and not long continued. A leukocyte count is invariably made—and never looked at until after the operation has been completed. It is not well to cloud one's judgment by paying attention to it beforehand. We have followed this plan in several thousands of these cases of acute appendicitis, and I am satisfied that by applying this method the patient has lost nothing, and we should have gained very little in our knowledge about the condition had we followed the usual plan of making repeated counts before operating. The plan followed by many surgeons of always operating immediately in case of a high leukocyte count or a rising count is bad practice because the judgment is then controlled by a minor factor, which is inconstant and unreliable, instead of being based on history and physical examination. We must remember that in a large proportion of the cases of chronic appendicitis the real trouble is caused by something that has happened during an attack or, in postoperative cases, during the operation or after the operation. These conditions are secondary either to an extension to surrounding structures of an inflammation of the appendix to begin with, or to adhesions or to overdistention of the intestinal wall or to irritation of the peritoneum, or to any one of the other conditions that are secondary to acute appendicitis. Dr. Cooke's suggestions are important and timely. The physician with little experience should not have the opportunity to open the abdominal cavity for the treatment of appendicitis. If one could be certain in every case of the correctness of the diagnosis of uncomplicated appendicitis, the operation could be performed safely by any clean surgeon with fair surgical judgment. Some years ago, Dr. Goldspohn outlined a plan according to which surgeons, gynecologists and all other specialists would have to undergo an apprenticeship. They would have to accumulate a large amount of experience and knowledge under men of experience, and in that way establish their right to perform these operations.

DR. FRED W. BAILEY, St. Louis: The papers of Drs. Cooke and Lower remind me of three vital and prevalent errors, careless diagnosis, indifferent postoperative treatment and the fact that we are not saving all the lives we should by our present-day treatment of acute appendicitis. In seeking a remedy we must strike at the source. Higher medical education and more rigid requirements in the specialty branches must continue to be striven for. In many states the undermining influence of cults is being felt severely. Pernicious state laws favoring such cults and undermining progressive medicine must be made impossible by a far-sighted policy of well planned and active participation in law making. The public must be warned more effectively against the far-

reaching danger of lax medical laws that not only permit, but encourage, incompetence. The time must come when gross incompetence in any branch of medicine or method shall receive the condemnation of the public, as well as the frown of the medical fraternity. Participation in law making, lay education and health supervision clear the way for early accurate diagnosis and intelligent treatment. To this must be added an extension of hospital supervision to the small, isolated, poorly equipped hospitals which are susceptible of development into institutions of extreme value to the health of the community, instead of factionally crippled centers of distinct menace. The encouraging statistics of large hospitals and skilled operators are valueless in that they portray ideal conditions and supreme surgical skill and judgment, such as does not obtain in a fair proportion of surgical cases. The records of small country hospitals, in which the bulk of emergency surgery is done, prove that the majority of such cases do not reach the statistical group and that the death rate in perforated cases is fearfully high. What is the remedy? Competent supervision in hospitals; trained men in each community. Let us teach mothers that there is elemental danger in acute abdominal pain and that home treatment must be limited to (1) bed rest; (2) no water, food or medicine by mouth; (3) no laxative, other than a small low enema; (4) no sedative, not even the ice bag, and (5) the physician. Physic and food have caused more deaths in this disease than delay or indifferent surgery.

DR. A. S. LOBINGIER, Los Angeles: Dr. Lower's paper is a sane expression of the doctrine that is accepted by the best men in this country, and this country has been the pioneer in the study of appendicitis. Dr. Bailey has well expressed what I had in mind. There is no getting away from the fact that every town of 5,000 in America has, or should have, one competent abdominal surgeon to do the work of that community. If there is no competent surgeon there, we have the opportunities in America to make him such, and it ought to be the patriotic duty of every small town to develop just such a surgeon and stand by him so that he may take care of the emergency conditions in the neighborhood, or, if not feeling competent, would be willing to call a surgeon from a nearby city. In our state, perhaps 70 per cent. of the men in practice feel competent to remove the appendix. These are the men to whom I think Dr. Cooke was addressing himself. It seems to me that until, as Dr. Ochsner said, we can have adequate education and training of young men who are going to enter the field of general surgery, or young men who are willing to act as assistants to trained men until they are competent to pass an examination held by master surgeons, we shall not reach the solution of this problem in America. Every man in this free country claims the right to say whether he is competent to do difficult major surgery; but he cannot justly claim the right to do major surgery unless he can prove his fitness for this work. I took the ground eleven years ago that we should have an examining board that should be under the supervision of the federal government, and I believe so today.

DR. C. H. MAGEE, Burlington, Iowa: "There is nothing new under the sun." Dr. Lower referred to the treatment of Alonzo Clarke, who treated appendicitis by tremendous doses of opium, 270 grains in twenty-four hours. That takes me back to my days in the London Hospital when I used to go around with Treves, who laid down the dictum, "When you strike pus, quit."

DR. FRANK WARNER, Columbus, Ohio: In talking with pathologists who have made examinations of appendixes after operations for so-called chronic appendicitis, I have been surprised to learn that they had been unable to find any evidence of pathologic change in many of them. I believe that in such cases the disease is elsewhere than in the appendix and that too frequently an insufficient study of the patient's general condition has been made. When a pathologic condition is found to justify the diagnosis of chronic appendicitis, and a cure does not follow the operation, it is evident that complicating factors continue the symptoms. As a result of the high percentage of ineffectual cures following the operation for chronic appendicitis, every surgeon should be admonished to make a most painstaking survey of every patient presenting himself with symptoms of this disease in the chronic state to know, if possible, that the disease really exists and, if it exists, that it is confined to that organ alone, or to know whether it is only one of the organs involved. Then these complicating conditions may be dealt with at the time of operation to the end that the large number of failures for the relief of the symptoms of chronic appendicitis may be reduced materially.

DR. R. C. COFFEY, Portland, Ore: Some wise man, on being asked the function of the appendix, remarked that it was "an organ which contributes to the support of a noble profession." It may also be stated that there is no feature of abdominal practice which contributes more to the ignoble profession of cultism than the poor results obtained from operations for so-called chronic appendicitis. Dr. Lichty last year called attention to an analysis of about 1,300 cases, in which only 60 per cent. could be considered at all cured. Of the patients going through our clinic in a routine way, 70 per cent. of those who have been operated on previously for chronic appendicitis have not been relieved or improved by operation. We all remember the day when right-sided pain called for removal of an ovary; and, if this failed, the appendix was removed; finally, the gallbladder was removed or drained, and then a gastro-enterostomy was performed, but the patient still had the same pain. There is an inorganic condition, which produces probably 50 per cent. of the right-sided pain, and this we must take into consideration in these cases. This condition, in most instances, is based on incomplete attachment of the ascending colon, which predisposes to bagging of the cecum or to the development of acquired bands and membrances which have been called out for its support. The pain is due to distention of the baggy cecum with gas, or to traction by the weight of the distended colon on these acquired membranes. Hence, the failure of appendectomy to relieve it.

DR. JABEZ N. JACKSON, Kansas City, Mo.: If I find a case in which the pain is entirely limited to the right side of the abdomen, it is not a case of chronic appendicitis. In acute appendicitis, as long as the pathologic lesion is limited to the mucosa, all the symptoms are referred, not to the site of the appendix, but to the stomach or somewhere in the umbilical region. If the patient is complaining only of pain in the right side, I think of Lane's kink or some form of pure peritoneal lesions. The "colicky" appendix is also of mechanical origin and not infectious. If the patient has had pain in the stomach, and nausea and vomiting; if he gives a history of epigastric pain, I am sure that it is a case of real appendicitis. In examining these cases we should remember three things: first, the patient may have appendicitis alone, acute or chronic; second, he may have chronic appendicitis with complicating conditions. I am sure that in many cases of chronic appendicitis there is more or less generalized colitis, and removal of the appendix is not going to remove the symptoms unless the case is followed up by the internist. Third, we must remember that other conditions in which there is no pathologic change in the appendix closely simulate appendicitis. In those cases the removal of the appendix invites failure.

DR. C. P. THOMAS, Los Angeles: I was in hopes that some of the younger men would stand up and defend themselves against this accusation. Since they do not, I am going to ask a question. I take it for granted that most of the men here are surgeons; some are full-time surgeons, some are part-time surgeons. The part-time surgeon is the one who says to the other fellow, "I do most of my own work, but when I get something hard I call in some one else." I want to ask how they know what is a hard case. At the end of thirty years of surgery I am still unable to diagnose the hard cases from the easy cases before I begin to operate. I can see where the older men, like myself, will admonish the younger men not to attempt things they are not sure of. We learned our surgery in the field of personal experience, often to the disadvantage of our poor patients, but we at least had the knowledge that we knew as much about it as any one else at the time, for the art of surgery had not reached the stage of perfection. What we want to pass on is that there is a way to

learn surgery and learn diagnosis without paying the penalty of sad results, as we did. We should go into the service of some good man and skill ourselves, as Dr. Cooke has outlined, until we are able to do everything that we find to do within the abdominal cavity when we open it; and even then we shall find incurable diseases.

DR. W. D. HAGGARD, Nashville, Tenn.: When Dr. Ochsner says that he never looks at the blood count, he doubtless means that he can almost tell what the blood count is from the examination of the patient; but when it is 27,000, he looks at it, especially in a child, in whom commonly the condition is a beginning pneumonia instead of appendicitis. In the average case of 12,000 leukocytes, one can estimate within one or two thousand what the leukocyte count will be. This question of chronic appendicitis is one that requires judgment and discrimination. Many patients are operated on unnecessarily for chronic appendicitis who are suffering only from what might be a perityphlitic neuralgia that occurs in neurotic subjects. They are not cured by operation. This is the same group of patients that in former years were operated on for ovarian trouble and for stomach trouble without avail. We must pay more attention to the ubiquitous neurotic patient who masquerades as a person with organic disease. My plea is not to a group of distinguished surgeons like this who are able to penetrate the veil of complaints that the neurotic usually makes, but to the unwary surgeons who are apt to think that the neurotic with pain of a burning type, with very few other symptoms, has chronic appendicitis.

DR. A. B. COOKE, Los Angeles: I particularly deprecate two observations Dr. Ochsner made, for the reason that when he expresses himself on anything in surgery every one believes it to be exactly as he says. The influence of an unguarded remark from that source is likely to be far-reaching. Dr. Ochsner did not mean that he did not pay any attention to the leukocyte count or, if he did, the rest of us are not in his class in being able by clinical examination to tell all that he can. For that reason I think an ill-advised remark from that source should be objected to. He said one other thing that I wish to take issue with. This was an unqualified statement to the effect that an operation for appendicitis is simple. It is simple when it is simple; but there occurs in that region almost every kind of intra-abdominal pathologic change. I particularly refer to those cases that are not truly appendical in their origin. The retrocecal appendix entails about the most difficult intra-abdominal operation. Hence, the unqualified remark that an appendicitis operation is simple should not be accepted. All this is said with particular deference to Dr. Ochsner. If ninety-nine out of a hundred of those present here had made these remarks, we might well let them go unchallenged. The burden of the paper I presented has been sidestepped, as I expected it would be. The problem is up to this section, because it is the national representative surgical body, to take up this matter of indiscriminate abdominal operations. I was hoping that some one would see the point and say something and present a resolution or motion that this section would go on record as favoring the adoption of some sort of standard before a man was permitted to open the abdominal cavity for any purpose whatsoever.

Heliotherapy.—The action of sun-baths on metabolism is still to a great extent an unexplored field. We know that a large number of vital reactions are accelerated, and suppose this increased rate to be in some way connected with the absorption of radiant energy by the blood. In what form is radiant energy stored in the blood, and how is it liberated to the tissues? These are questions of great scientific interest, but they cannot as yet be answered. The experiments of Sonne, showing that under the influence of visible rays the blood may be heated many degrees above the normal body temperature, open up a vast field for speculation, as we know how greatly a biochemical reaction may be accelerated by even quite moderate rises in temperature.—Rollier: Heliotherapy, London, Oxford Medical Publications, 1923.

THE DIAGNOSIS AND TREATMENT OF SEPTIC SINUS THROMBOSIS*

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Septic invasion of the lateral sinus in its various forms is a comparatively rare complication of purulent otitis media. In view of the comparative thinness of the inner (cranial) table of the temporal bone, areas of which are often bathed with pus or infected exudates for long periods of time, one marvels that proportionately so few intracranial complications occur. Erosions of the inner (visceral) table of the temporal bone may occur at any point, but they are more commonly found in the tegmen and about the knee of the sigmoid sinus. Nevertheless, necrosis of the inner table, even when considerable areas of the dura over the sinus are exposed to the purulent process which invades the mastoid process, is not invariably followed by sepsis within its lumen. Erosions of the inner table, with exposure of the dura, are discovered with comparative frequency during the process of mastoid operations, with no subsequent sequela pertaining to intracranial infections, showing that the outer wall of the dura must possess considerable resistance to the contact of infection. The sinus transversus or lateral sinus, on account of its course along the inner table of the temporal bone, is naturally the intracranial venous structure which most concerns the otologist.

It is generally conceded that lateral sinus infection is induced either (*a*) by extension of the infective process within the temporal bone through the smaller veins whereby the latter become involved with septic thrombi, which gradually extend to and infect the sinus, or (*b*) because the infection in the bone extends, by contiguity, directly through its internal table to the walls of the blood vessel, where its farther advance is characterized by infection of the sinus walls, and thence into the blood stream with resultant thrombosis. Furthermore, according to Boenninghaus, thrombosis may occur from infection located within the labyrinth, in which event the sinus involvement is usually located below the level of the knee or through involvement of the inferior or superior petrosal sinuses.

In another group of cases, the infection proceeds from a labyrinthine infection directly toward the bulb, through involvement of the lymph spaces of the middle ear, or through the extension of a thrombus from the internal auditory vein. Finally, a thrombosis of the jugular bulb may take place from direct infection through dehiscences in the floor of the tympanic cavity. We must conclude, therefore, that phlebitis and thrombosis of any part of the lateral sinus and internal jugular vein may result from (1) anatomic dehiscences in the bony tissue of the parietal wall; (2) direct extension in its walls of the active purulent lesion in the bone; (3) involvement of the smaller veins of the diseased bone, or (4) involvement of the intermediate anastomotic veins in the thrombotic area. An anatomic outline of the sinus, prepared in chart form, has been of great service to me in outlining and teaching the anatomic relations of the lateral sinus.

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DIAGNOSIS

In the management of cases of lateral sinus infection, the diagnostic pathway of the otologist is often beset and befogged with serious difficulties and trying experiences. These difficulties arise from the fact that in a considerable proportion of all cases the symptoms of the invasions do not follow a typical course. In typical cases in which only one ear is involved, when accompanied by the usual variation in temperature and the early appearance of bacteremia, a diagnosis is easily determined. In this type, the symptoms are so characteristic that but little along the line of differentiation becomes necessary. Erysipelas, particularly when the surface manifestations are delayed, often produces similar temperature variations to those seen in early stages of typical cases of septic sinus thrombosis.

One of my patients, an adult, four days after simple mastoid operation, had a severe chill with a temperature rise to 106, followed by a subnormal recession lasting twenty-four hours. In this case, there occurred three such sudden rises of temperature, ranging from 105 to 105.6 on succeeding days with chills, nausea and other symptoms of sinus thrombosis. The sinus was then opened and found normal, but, when the wet dressing was changed twelve hours later, the characteristic skin lesion of erysipelas had appeared. While the patient made a good recovery, the experience was disconcerting to the surgeon.

Another somewhat rare postoperative condition which is invariably ushered in with a sudden rise of temperature and chills may be defined as an extensive nonerysipelatous cellulitis of the scalp. Even in the typical cases of septic sinus thrombosis, one hesitates to operate until the blood examination shows the presence of bacteremia in the blood stream. In atypical cases, the diagnosis is always difficult and requires an exhaustive consideration of the entire chain of symptoms, meanwhile taking advantage of blood cultures, blood examinations and all known methods whereby other diseases may be eliminated. Evidently, atypical cases often occur and recur in which no diagnosis is ever made unless general symptoms of septicemia appear. It is also evident that in typical cases recovery may take place without operative intervention. These statements are confirmed by my experience in discovering obliterated sinuses in cadavers during the years when I taught the operative surgery of the ear. Furthermore, evidences are gradually accumulating that recoveries do take place with comparative frequency in patients whose sinuses are not subjected to operation. This statement is not made as an argument against operation, even though the observation may serve as a hint to the overbold otologist. A high temperature continuing several days after a mastoid operation, especially when the operative findings have disclosed areas of necrosis of the bony covering of the lateral sinus, and examination of the blood shows bacteremia, leukocytosis and a high polymorphonuclear percentage, and no other body complications, furnishes sufficient evidence to call for an examination of the interior of the sinus.

Of the previously mentioned symptoms, the presence of bacteremia, not otherwise accounted for, is the most convincing diagnostic symptom. In both types of sinus involvement, particularly when occurring in chronic purulent otitis media cases, the patient has a chill with each rise of temperature, but this symptom is often absent in young children and it is in young children with acute cases that we meet our most trying difficulties. It is surprising how many writers on this subject fail to mention or to take advantage of so important a measure as blood cultures for bacteremia. In an exhaustive discussion of septic sinus thrombosis, Mulligan [1] made no mention of bacteremia. The diagnosis of primary jugular bulb thrombosis, described by McKernon and others, must depend largely on the violent attack, the sudden rise in temperature, and the subsequent fluctuation from normal or subnormal temperatures to extremely high ranges in infants who may have no general symptoms of mastoiditis. The early diagnosis in infants and young children, in whom it usually occurs, often without intercurrent mastoid infection, is most difficult and may be made only after other diseases, such as pneumonia, typhoid fever and digestive disturbance, have been eliminated. Here again the presence of bacteremia is significant. When necrotic areas of the bony covering of the sinus are encountered during the progress of a mastoid operation, the sinus walls should be carefully observed. Occasionally a thrombosis in the sigmoid region is discovered only at the time of operation. The presence of necrotic or sloughing spots on the sinus wall is strong evidence that the infection has already invaded the blood current within. Palpation of the sinus wall is an uncertain diagnostic measure, since the clot may only be mural. In fact, pulsation may continue after a clot of considerable size has formed. If pulsation is absent and the pressure is doughy, a thrombus may be expected.

Our greatest difficulties in diagnosis, however, occur in cases of double mastoiditis and, unfortunately, double mastoiditis is far more common in young children. This, combined with the fact that children are peculiarly susceptible to high temperature ranges from the more simple causes, and furthermore, that they do not as a rule exhibit the full outline of classical symptoms, renders a diagnosis difficult. This difficulty, however, is comparatively simple when compared with our troubles in determining which lateral sinus in the individual case may be involved. It has been my privilege to be a consultant in a comparatively large number of these cases. In every instance the patients were young children; likewise, in every instance they had extremely high temperatures. With one exception, bacteremia was present, though often delayed. In several of these patients, the sinus walls were exposed on both sides during the performance of the mastoid operation. In general, the operative procedures in these cases have been about as follows: A careful study was given to all the details of each individual mastoid area, and the side presenting the more probable symptoms of sinus involvement was the first to be investigated. In every instance, however, both sinuses were freely exposed, the purpose being to enable us to observe carefully the general condition of the sinus wall, to palpate it, and, if necessary, to introduce a hypodermic needle into the suspected sinus. If no fluid blood could be drawn, a clot would be considered the explanation. If blood was obtained, a culture was immediately started from this specimen. Then the same measure would be followed for the opposite side and a similar culture started, in the hope of determining which side might show an excess of bacteremic contents. In one of these cases there was no return of blood on the side which, fortunately, had been considered the one affected. This cleared up the diagnosis, and a complete operation was then performed.

1. Mulligan, William: J. Laryngol. & Otol., Jan. 23, 1923.

In another case manifesting septic symptoms, but without bacteremia, blood was drawn from both sinuses, but the patient's condition was so bad that, without waiting for the laboratory report, the sinus most suspected was opened and no clot was found. The vein was not tied off, nor was the opposite sinus further interfered with. The subsequent treatment consisted of repeated transfusions, but the patient recovered after a long period of metastasis. It is unfortunate that clots are not always encountered in these children and one must often be content to treat the case symptomatically until some definite symptom arises which will warrant ligation. Herein lies an important precautionary principle worthy of consideration by the overzealous operator or the questionable urge for early operation before a positive diagnosis has been determined. In a recent case of mine, in a child, aged 10 months, a simple mastoid operation was followed by a postoperative rise of temperature to about 100 for six days, and then a sudden jump to 105. There was no cough or lung complication, but the appetite was poor. A liberal dose of castor oil was followed by foul, mucus laden stools. The digestion was then supervised, and the temperature became normal and has remained so.

It is probable that atypical cases of sinus involvement are extremely rare in young children. This fact is probably accounted for by the tendency to high temperatures which children seem to possess. It is possible, of course, that occasionally an atypical case may be overlooked by the surgeon, for it is a fact that they often recover spontaneously. It is also a fact that children with sinus involvement who have extremely high temperatures recover under appropriate treatment. In one case that I observed a child's temperature reached 106 before the sinus operation and 107 immediately after it. This child made an uninterrupted recovery. A temperature of 106 is not at all rare. Of the more recent additions to our armamentarium of treatment for this infection, blood transfusion must take the most prominent place. In fact, a transfusion may well be administered in every case, whether the sinus is operated on or not. It is not recommended that transfusion displace ligation in unilateral cases in which a positive diagnosis is made, but in bilateral mastoiditis, when it is impossible to determine which sinus may be involved, transfusion is a most valuable adjunct in helping to combat the infection, at least until the side of infection may be located. A number of undoubted cases of lateral sinus thrombosis occurring in bilateral mastoiditis have been reported in which transfusion alone has been relied on, rather than subjecting the patient to the risk of an uncertain operative procedure.

At a recent meeting of the New York Otological Society, McFarland reported two cases of double mastoiditis in which there were typical histories of lateral sinus involvement and it was impossible to determine which sinus might be invaded. In both of these cases, several transfusions were given covering a period of from ten days to two weeks, and both patients recovered. The positive symptoms stated by McFarland are the typical temperature range, leukocytosis and bacteremia. It would seem advisable to resort to blood transfusion at the very earliest possible moment after a diagnosis has been made, even though subsequent ligation should be determined on. As a rule, children comfortably receive from 300 to 400 c.c. at a time, while in adults a much larger amount is required and transfusion may be repeated, when necessary, in from two to three days.

TREATMENT

Regarding the type of operation to be performed on the vein in the neck, opinions still vary. The majority of operators have gradually come to believe that simple ligation of the vein accomplishes every required purpose, and it does not seem to matter even if the vein is ligated in its lower portion. Theoretically, it would seem wise to ligate above the entrance of the facial vein, but practically the lower ligation is fully as effective and is much more easily accomplished. A complete dissection of the vein is still advocated by some operators on the ground that it removes a larger infected area, but statistics prove that ligation is equally effective and successful. The fact that ligation, particularly when made in the lower portion of the vein, can be accomplished quickly and without subjecting the already weakened and exhausted patient to prolonged anesthesia, counts much in its favor, and Nature seems to care for all the rest, except in occasional cases in which the prolonged temperature is finally relieved by opening up the bulb region freely from the mastoid wound. The lower neck operation can be completed in from ten to twenty minutes. The bulb region is apparently the only area in which real pus is liable to collect as a postoperative lateral sinus complication. If the ligation method is followed, the ligatures should be applied to the vein sufficiently far apart to enable the operator to sever the vein. It has been my experience that in my ligation cases the neck wound heals more promptly and with less deformity than when the vein is resected.

At the 1923 meeting of the American Laryngological, Rhinological and Otological Society, Dr. H. G. Tobey of Boston reported a case of double sinus infection in which the sinus was opened by him on both sides. He observes that a careful review of the literature since 1890 reveals only three other cases of actual obliteration of both sinuses. In one of these cases, the left sigmoid sinus was opened and a thrombosis removed without the jugular vein being tied. Five days later a thrombosis was removed from the right side and the jugular vein of that side was ligated. The patient recovered. In a second case, it would appear that both sinuses were opened without positive evidence of a clot and without ligation on either side and the patient recovered. In a third case, the right sinus was incised about three weeks after the primary mastoid operation and the jugular vein of that side tied and partially resected. No clot was found and there was free bleeding from the sinus. The left sinus was then incised and packed, but the jugular was not ligated. This patient recovered. Dr. Tobey's patient was subjected to a double mastoid operation, April 25, 1918. Four weeks later the right sinus was opened and the internal jugular vein ligated. Six days later the left sinus was incised and packed off, but the jugular was not ligated, and after a prolonged illness this patient recovered. It should be noted that in these four cases only one jugular vein was ligated. In the light of the more recently reported cases of recovery from lateral sinus infection in double mastoid cases wherein it was impossible to determine which sinus might be involved, it is a question whether, in the four cases enumerated above, the patients might not have recovered without being

subjected to the extreme danger of opening both sinuses.

Ballance,[2] who in turn quotes from Charpy, outlines the various anastomotic channels followed by the return flow from the cranium:

> Under normal conditions almost the whole of the blood from within the cranium is returned by the two internal jugular veins; there are, however, numerous anastomoses between the intracranial and the intracranial venous circulation, which allow of alternative routes when one or the other of the jugular veins is not available.
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> There are three principal, and many accessory, communications. The three principal ones are: 1. The plexus of the foramen magnum, the uppermost of the spinal plexuses, anastomoses with the transverse occipital sinus in front and with the posterior occipital sinuses behind. Further, these plexuses, or their collecting trunks, the vertebral and posterior jugular veins, anastomose with the posterior condyloid emissary vein and with the mastoid emissary vein. The communications here are so free that the whole of the blood from within the skull can emerge by this route after ligature of both jugulars. In the fetus, and even in the new-born, the cranial surface of the lower half of the occipital bone is covered with a close network of large veins, which take up the blood from the torcula and its vicinity and discharge it into the origin of the jugular. This network, as development proceeds, becomes gradually changed into occipital sinuses; hence, the great variety in the size and arrangement of these vessels. 2. The ophthalmic vein and its affluents, through which a considerable volume of blood may enter the facial and temporal veins. 3. The middle meningeal veins, through which there is communication between the superior longitudinal sinus and the pterygoid plexus.
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> The accessory communications are innumerable, for the origins of the external jugular and of the facial portion of the internal jugular communicate with those of the intracranial veins practically everywhere over the vault and over the base.

In the preparation of this paper, no attempt has been made to cover the subject completely; but it is hoped that the comments on some of the problems met in lateral sinus infection may provoke a valuable discussion and that much light may be thrown on a difficult phase of otologic practice.

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ABSTRACT OF DISCUSSION

DR. RALPH A. FENTON, Portland, Ore.: The early recognition of organisms in the blood is important. We must agree that continued high temperature should call for blood cultures, timed, if possible, to catch the organism just before the critical temperature rise. Improper timing often misses this diagnostic discovery. His recommendation of a direct blood culture by aspiration from suspected sinuses is most important, and his suggestion of transfusion from properly classified donors in doubtful cases will be received gratefully by men who have felt that operation alone was of uncertain value, or, in certain single and all double cases, a menace. I should like to ask Dr. Phillips his opinion regarding the merits of administering mercurochrome-220 soluble or acriflavine solution intravenously.

DR. HAROLD M. HAYS, New York: The problem of vital interest is, Which sinus is causing the trouble? I have had a number of these cases, and repeated blood cultures have been taken until we could determine there was actually some sinus involvement. In cases of double mastoiditis with sinus involvement, examination of the eyegrounds is of the utmost importance, because frequently there is congestion about the optic disk on the side of the involved sinus. It is also important to take the blood from both sinuses and wait for a report from the laboratory; then ligate on the side containing the most bacteria. Another question is, whether the sinus must be ligated if a clot is not found. Is opening the sinus sufficient without ligating the vein? Dr. Phillips and I attended a child with double mastoiditis, and the culture showed *Streptococcus hemolyticus*. We felt sure that the left side was causing the trouble. We opened the vein, and then went to the right side. There was free blood in both veins, and we felt that it was not proper to do more. We did not ligate the vein. The temperature fell, and the child is well today. I cannot emphasize too strongly repeated blood cultures—sometimes before operation, and sometimes after. We make use of blood transfusion by the Young method all the time, and the more we use it the more we are assured that there are many cases that cannot be cleared up without blood transfusion.

DR. MALCOLM C. ROSE, New York: No treatment has given me such satisfactory results as vaccine treatment. One should use a vaccine as soon as one sees the patient. Valuable time is often lost by waiting for an autogenous vaccine to be made. I start immediately with a stock vaccine, and sometimes the case is cleared up before the autogenous vaccine is ready for use.

DR. WENDELL C. PHILLIPS, Philadelphia: I have had no experience with mercurochrome-220 soluble.

2. Ballance: Surgery of the Temporal Bone, New York, the Macmillan Company, 1919.

ACUTE TOTAL VOLVULUS OF THE STOMACH *

MAX THOREK, M.D.
CHICAGO

Volvulus of the stomach is rare. The first case was reported by Berti[1] in 1866. Berti's case was a total volvulus found at necropsy.

The first reported case in which operation was performed was that of Berg,[2] in 1895. Berg reported two cases, one of a total, the other a partial, volvulus. Since then, several total and partial cases have been reported, the partial being the more common.

Kocher,[3] who in 1914 reported a case of total idiopathic volvulus of the stomach in a woman, aged 53, found twenty-eight cases in the literature. Cases of total volvulus have since been reported by Niosi[4] and Siegel,[5] the latter case being in a child, aged 2 years.

REPORT OF CASE

I have recently observed and operated in the case of volvulus here reported:

History.—Mrs. A. P., a widow, aged 77, had pneumonia during 1895 and again seven years ago; otherwise she was never ill and enjoyed good health except for chronic constipation. There was no previous history of gastric ulcer or distress. Two days previous to admission to the hospital, Dec. 19, 1922, the patient partook of some indigestible food. The bowel action for three days before that time had been constipated. Toward evening she experienced rather sharp pains in the upper part of the abdomen, radiating from the right to the left hypochondrium. At the onset of these pains there was constant emesis of the stomach contents, which gradually subsided to be superseded by nausea. The abdomen (below the umbilicus) from that time on became very much distended and, despite attempts at catharsis and enemas, as

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

1. Berti: Singolare attortigliamento dell'esofago col duodeno seguito da rapida morte, Gazz. med. Ital. **9**: 139, 1866.
2. Berg: Zwei Falle von Axendrehung des Magens; Operation; Heilung, Nord. Med. Arch. **13**: 191, 1895.
3. Kocher: Ein Fall von Magenvolvulus, Deutsch. Ztschr. f. Chir. **127**: 591, 1914.
4. Niosi: Contributo allo conoscanza del volvolo dello stomaco, Rif. Med. **23**: 1287, 1907.
5. Siegel: Ueber den Magenvolvulus, Zentralbl. f. Chir. **48**: 611, 1921.

well as intramuscular administration of pituitary extract and physostigmin salicylate, no bowel action could be obtained. Since the day of admission to the hospital, retching yielded a small quantity of mucus tinged with blood.

Physical Examination.—The general appearance of the patient was that of severe agony. The temperature was subnormal (96.8 F.); the pulse was of good quality, 88 and

Fig. 1.—Appearance of twisted stomach simulating ovarian cyst with twisted pedicle.

arrythmic. The head, neck and thorax were normal. There were no murmurs. The systolic blood pressure was 155; diastolic, 80; pulse pressure, 75. Urine analysis and blood examinations were negative. The abdomen showed marked distention, commencing about two fingerbreadths above the umbilicus and extending down to the symphysis pubis and spreading laterally to the flanks. The recti abdominis were rigid; no peristaltic waves were visible. Despite the emaciated condition of the patient, and consequent thinness of the abdominal wall, auscultatory phenomena could not be elicited. There was uniform dull, tympanitic resonance all over the distended area. Attempts to pass a stomach tube were unsuccessful.

Acute intestinal obstruction, and stricture at the cardiac end of the stomach were diagnosed.

Operation and Result.—Under spinal anesthesia (tropacocain), a median celiotomy was made. A large mass resembling a distended ovarian cyst appeared in the peritoneal opening. The thought occurring at that moment was the possibility of an incarcerated ovarian cyst with twisted pedicle and compression of certain segments of the intestinal tract, giving rise to intestinal obstruction. Exploration by guiding the right hand over the mass into the pelvis and lifting it up and evacuating its contents by means of an ovarian trocar revealed the true nature of the condition (Fig. 1). We were dealing with the stomach. Its weight and enormous size made it difficult to deliver it into the wound. After packing the surrounding area with laparotomy sponges wrung out of a warm salt solution and evacuating the stomach contents (found to consist of undigested food particles and an enormous quantity of gastric fluid of turbid appearance and gastric odor), the tumor reduced its size and permitted its delivery into the wound, where it was found to be completely twisted on its horizontal axis about 270 degrees, the pylorus being dragged to the left side and the cardiac end being completely twisted (Fig. 2). The transverse colon was vertical and above the lesser curvature (Fig. 3). The spleen was displaced forward and upward. Detorsion was effected, after which the stomach was found to be extremely ptosed. It was suspended to the anterior abdominal wall by the Rovsing method of gastropexy (Figs. 4 and 5). The patient experienced no pains during the operative manipulation.

The patient was returned to bed in excellent condition with no shock. No fluids were permitted for the first twenty-six hours by mouth. Glucose and salt solution were administered by rectum. Gastric lavage was done morning and night for seventy-two hours. Gradually, liquids were allowed by mouth, followed by semisolid and solid foods, respectively. Complete recovery ensued.

OCCURRENCE OF VOLVULUS

Volvulus of the stomach almost always occurs in the isoperistaltic sense, i. e., from back to front; it is rarely antiperistaltic, and when so is usually only partial.

According to its extent, a volvulus may be total or partial. The volvulus is said to be total when the viscus entirely turns about the cardiopyloric axis for 180 degrees, the rotation bringing the great curvature of the stomach under the diaphragm and the posterior face in front. If only a part of the viscus turns, the volvulus is incomplete or partial.

According to its evolution, volvulus may be acute or chronic, idiopathic or complex. We speak of it as idiopathic when there is volvulus alone without apparent coexisting pathologic conditions in the organ. Partial volvulus is more frequently complex, showing an associated ulcerous condition, hernia or other complication.

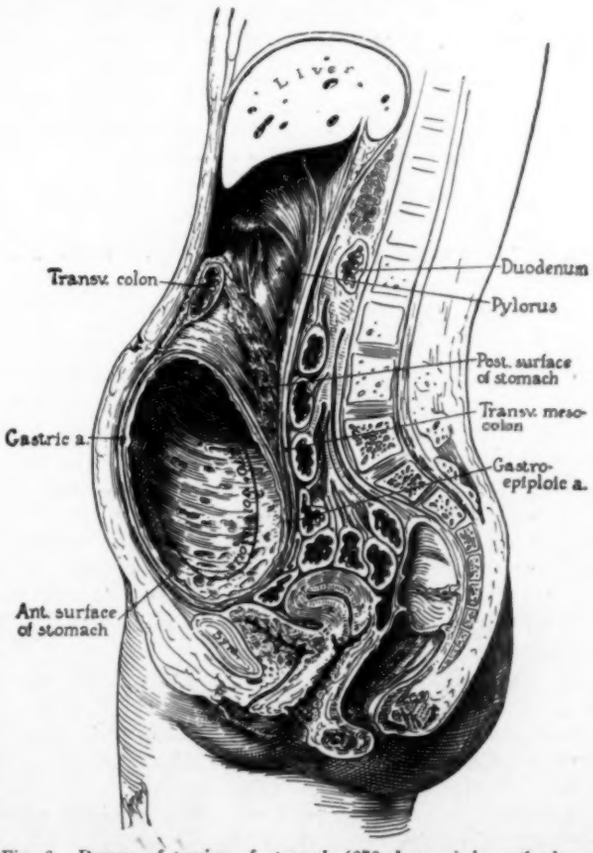

Fig. 2.—Degree of torsion of stomach (270 degrees) in author's case; the relative position of pylorus and cardia may be noted.

Practically all forms of stomach volvulus may be reduced to two principal types: the total idiopathic acute type, and the partial subacute or complex type.

MECHANISM

In displacements, the stomach is firmly held only by the cardia and the pericardial peritoneum. The

pylorus has not the same fixity, and allows complete rotation of the stomach from below upward.

No ligament offers any serious obstacle to stomach volvulus, except perhaps the phrenogastric ligament, but this does not seriously hamper evolutions of the great curvature of the stomach. The vertical portion

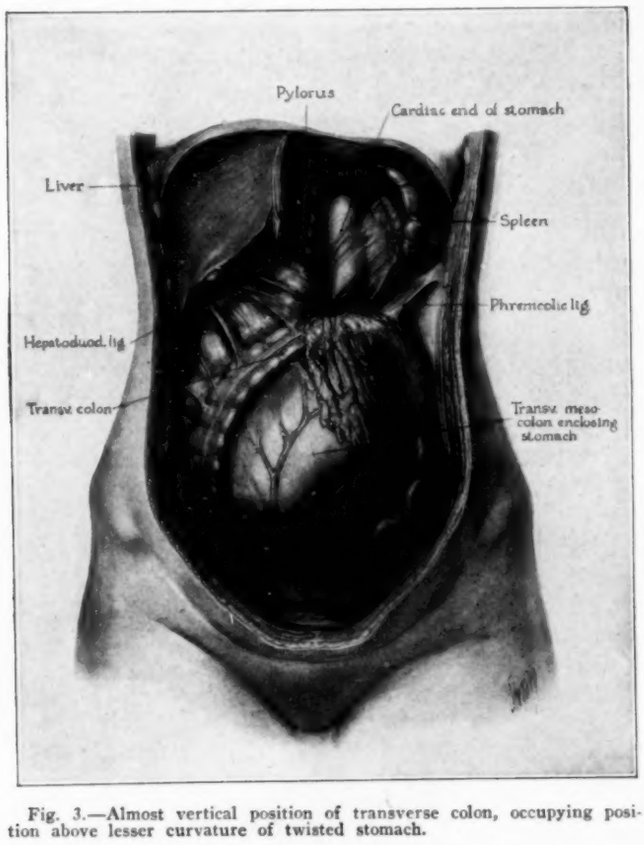

Fig. 3.—Almost vertical position of transverse colon, occupying position above lesser curvature of twisted stomach.

of what is habitually called the great curvature in reality belongs to the anterior face, the true great curvature being several centimeters behind. The stomach dome, in immediate contact with the diaphragm and fixed by the phrenogastric ligament, does not move unless it is subjected to extraordinary traction; no volvulus can therefore be total, in the strict sense of the word, but partial only.

The axis of the movement of torsion is the small curvature and does not vary in ordinary cases. After a certain amount of rotation, the mobile pylorus begins to move (Fig. 6) toward the immobile cardia; the small curvature folding into a V with the opening above. When the torsion becomes more accentuated, the pylorus may actually come into contact with the cardia, and the small curvature is then only a deep sulcus by reason of the approximation of the sides of the V. If the torsion still continues, which is very exceptional, the two orifices form but one pivot, about which the viscus twists.

The ordinary degree of torsion does not exceed 180 degrees, but exceptionally it may reach 270 degrees, as in Kocher's and in my case, or even 360 degrees, as in Niosi's case.

Usually the large curvature is above, beneath the diaphragm and liver, the small curvature is below and may, if suspected, be recognized by the branches of the stomachal coronary artery, which has an ascending direction (Fig. 7).

PATHOLOGY

In total idiopathic volvulus, when the abdominal wall is opened, the posterior wall of the stomach appears, covered by mesocolon (unless the latter has ruptured). The vascular circulation is not, however, usually disturbed to any great degree. The orifices of the stomach are kinked, stretched or displaced, and become occluded, resulting in distention of the stomach, which may reach a great degree. An enormous, tense, congested, discolored tumor bulges into the abdominal incision. The transverse colon, spleen and pancreas may be displaced even to the fundus of the bladder, or even luxated.

In the literature, the spleen was observed to be twisted in four cases; it was much displaced in my case also.

The transverse colon following the displacement of the stomach may take a vertical position, as in the case reported, in which case the volvulus is intracolic. The greater and lesser omentum and ligaments are usually involved in a total volvulus, and may be ruptured. Blood or serosanguineous fluid may be found in the peritoneal cavity if there has been any rupture. Finally, the distended stomach may herniate through the diaphragm, drawing other organs with it, although such an eventuality is very rare.

In the great majority of cases of stomach volvulus, the condition is only partial; the cardiac part of the stomach remains in place, while the pyloric part under-

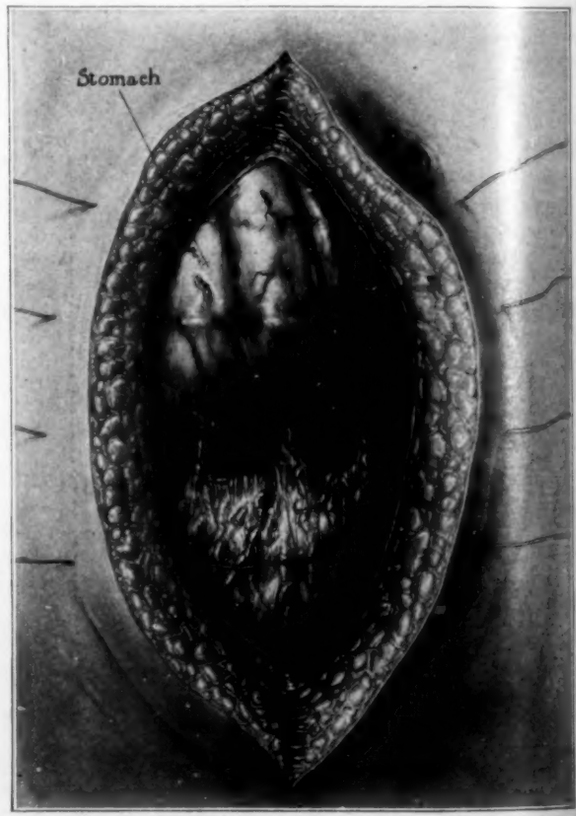

Fig. 4.—Gastropexy after detorsion of stomach.

goes rotation from behind toward the front and from below upward. The stomach then appears in two parts, one upward to the left and vertical, the other beneath and horizontal, the pyloric vertical part being dilated.

Occasionally a partial volvulus may result from the stomach becoming engaged through an abdominal peritoneal opening and forming a stomachal abdominal

hernia. There are at least two such cases in the literature.

One of the first effects of stomach distention is the pulling of the pyloric end. As the volvulus proceeds, the pylorus approaches nearer and nearer to the cardia, and the latter may even be stretched downward, as it is laterally fixed by the diaphragm. The distended fundus of the stomach pushes the diaphragm, and with the cardia drags and elongates the esophagus. The obliteration of its orifices is not the only obstacle to evacuation of the stomach contents; the mediogastric kink at the junction of the vessels of the small curvature causes a very acute angle and tends toward the formation of isolated cardiac and pyloric sacs. The occlusion and attendant distention act reciprocally on each other, one increasing with the other. That is, there is a reciprocal action of effect on cause and a vicious chain without end.

Fig. 5. — Gastropexy sutures tied over roll of gauze placed along the line of the abdominal incision.

Up to a certain degree of torsion, dilatation of the stomach has a tendency to reduce volvulus and diminish it. But if equilibrium betweeen the forces, which on the one hand tend to force the stomach upward in the torsion sense and, on the other hand, to force it downward, is upset, the stomach becomes incarcerated between the anterior abdominal wall and the diaphragm, and spontaneous reduction is no longer possible. Siegel thinks that an abnormal elongation of the small omentum is an indispensable condition.

The obstacles to evacuation of the stomach in volvulus are not always extrinsic strictures by vascular or ligamental bands, but intrinsic kinks and flexures situated either at the orifices or in their neighborhod and on the body of the organ. The lesions of an occluded stomach are similar to those of an obstructed intestine: dilatation, distention, congestion and turgescence. If death does not cut the process short, it ends in perforation of the stomach by fissure or rupture, the result of the extreme stretching of its tunics, as well as sphacelation and necrosis due to disturbances of circulation.

ETIOLOGY

Total volvulus is rendered possible by ligamental relaxation and consequent stomach ptosis, as in the case reported here. Most writers on the subject, and Peyer[6] especially, give an important rôle to ptosis of the stomach and to abnormal mobility. The immediate excitatory causes, according to Kocher, being usually overfilling of the stomach, peristalsis after antiperistalses, vomiting and mechanical torsion after movements of the body because of the weight of the distended and ptosed organ. Hour-glass stomach, Kocher thinks, is a frequent factor in partial volvulus; it was observed in seven of eighteen cases in which operation was performed.

Partial volvulus is almost always associated with other lesions, either gastric or extragastric, such as tumors and ulcers. Adhesions and biloculation hold the first place as accessory factors. A partial volvulus of the stomach, realized experimentally, produces two kinks, one in the body of the organ, the other, the more important, being the pyloric or duodenopyloric. The latter is due to ascension of the pylorus, the duodenum being fixed. It causes dilatation, ascension and deviation of the pyloric sac toward the right; but, the evolution being slow and nutrition of the organ being sufficient, the lesions never reach the stage of rupture but only cause hypertrophy of the stomachal walls.

SYMPTOMATOLOGY

The symptomatology of total idiopathic volvulus forms a characteristic picture. Its onset is sudden, its evolution is rapid, its progress, if unrelieved, is fatal.

The symptomatic triad which is characteristic of gastric volvulus is (1) acute meteorism of the stomach; (2) impossibility of passing a gastric sound, and (3) symptoms of ileus. Niosi thinks that thoracic pain and displacement of the heart to the left might be added, and he adds three other symptoms observed in his cases: (1) the sensation of torsion in the gastric region; (2) the sensation of painful traction in the vicinity of the heart corresponding to elongation of the esophagus, and, (3) displacement of the spleen, which forms a hard, palpable tumor in the mesogastric region or above the pubis. All these symptoms are valuable when a gastric volvulus is thought of or suggested, and other conditions can be ruled out.

The symptoms of partial volvulus are often preceded by old digestive disturbances, and have no clear-cut clinical individuality. Occlusion in partial volvulus is not complete, and remissions are frequent. The symptoms rather resemble those of stenosis (vomiting; loss of weight).

DIAGNOSIS

Diagnoses of stomach volvulus have not been made often; as the lesion is a rare one, physicians have no chance to observe its evolution. It has been confused with the majority of the major pathologic conditions of the abdomen, intestinal ileus, pancreatitis, etc.

Siegel says that in his case the diagnosis was evident, as after lavage of the stomach and the withdrawal of a large quantity of fluid contents, the original distended dimensions reappeared after a few hours. Niosi preoperatively diagnosed his case of partial volvulus. Rosselet[7] recently reported a case of partial stomach volvulus radiographically demonstrated and verified by operation.

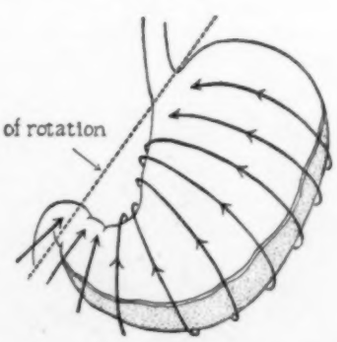

Fig. 6.—Axis of rotation of lesser curvature in volvulus of the stomach.

If volvulus of the stomach is thought of, perforative peritonitis must be excluded as well as acute pancreatitis. A stomach condition is differentiated by the sudden extreme meteorism, by the appearance of a large tympanitic tumor in the stomach region, and by a

6. Peyer: Mitt. a. d. Grenzgeb. d. Med. u. Chir. **20**: 686, 1907.

7. Rosselet and Gilbert: J. de radiol. et d'élect. **6**: 76, 1922.

change in the level of the fluid when the patient's position is changed.

TREATMENT

The treatment of volvulus of the stomach can only be surgical. A correct appreciation of the condition, either before operation or after opening the abdomen, is essential, as delay in proper treatment or a failure to recognize the findings may be fatal. In Kerr's [8] case the condition was thought to be an acute dilatation of the stomach, and the stomach was punctured, the incision made being only about two inches. The patient died fourteen hours later, and necropsy showed complete volvulus. When recognized early, evacuation of the stomach, detorsion and fixation are all that is necessary to afford complete relief.

The first operative procedures include: (*a*) incision; (*b*) examination of the existing conditions and diagnosis, if not diagnosed already; (*c*) evacuation of the stomach contents, and (*d*) the detorsion proper. The volvulus can be considered as reduced only when the

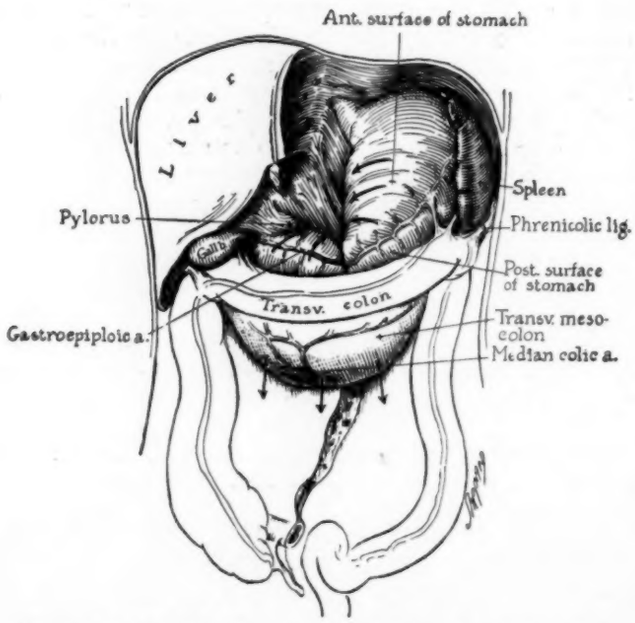

Fig. 7.—V-shaped infolding of lesser curvature in volvulus of stomach. The relative position of the viscera may be noted.

ramifications of the coronary arteries of the stomach are placed in their proper situation.

The complementary operations are either a gastropexy (anterior partial) or Coffey's operation of gastropexy, which fixes the organ in a good place; or, if there is any concomitant stenosis, a gastro-enterostomy, jejunostomy, or fistulization of the stomach. The actual condition of the patient must determine the choice of operation.

Niosi thinks detorsion and gastro-enterostomy preferable to gastropexy.

Operation in cases of total volvulus has given 60 per cent. of recoveries; and in the case of partial volvulus, operation is benignant.

Tuffier and Jeanne[9] give case histories of five early cases discovered at necropsy, including that of Berti already mentioned, and also fourteen cases in which operation was performed. These include the cases of Berg, Wiesinger, Dujon, Borchardt, Pendl, Sinjuschin and Peyer, of total volvulus.

Of the twenty-eight cases compiled by Kocher, operation was performed in eighteen, and of these patients thirteen recovered. Siegel's and Niosi's patients both recovered. With early operation, the prognosis of total stomach volvulus may be said to be good.

8. Kerr: Volvulus of the Stomach, Ann. Surg. **56**: 697, 1912.
9. Tuffier and Jeanne: Le volvulus del'estomac, Rev. de gynéc. **18**: 27, 1912.

SUMMARY

The possibility of stomach volvulus must be kept in mind in obscure and puzzling acute abdominal conditions. The simpler the operative porcedure, the better. Detorsion and simple suspension, followed by persistent and thorough gastric lavage, seems to be the most rational procedure in such cases.

ABSTRACT OF DISCUSSION

DR. JAMES T. PILCHER, Brooklyn: This condition is precipitated almost invariably by the ingestion of a rather large meal, eaten hurriedly. The mechanism, however, I do not think anybody knows. We theorize to a large extent. There should never be any difficulty in immediately diagnosing the condition when there is vomiting, which stops, and is followed by an immediate increase in distention as the result of the production of some gas, due to a changed chemical reaction in the stomach. It seems extraordinary, the rapidity with which this gas forms and the inability of the patient to belch. In one case which I saw I was able to "detorsionize" the stomach, to rerotate it, turn the stomach back far enough to introduce the stomach tube, and, after the evacuation of the stomach had deflated it, the organ could be rotated around into place, and the patient was entirely relieved. The literature of this subject shows that in a large majority of the cases these people have had acute but transient previous attacks, very many of them, and that they have found relief previous to their final catastrophe by manipulation, lifting up and pressing in the epigastrium. They reduce and detorsionize the stomach. The most interesting feature of these cases is the fact that in many hour glass stomachs the proximal pocket becomes rotated, constituting a volvulus of the proximal pocket of an hour glass stomach. There is no question that the operation as proposed and carried out by Dr. Thorek is the only feasible one. We know that in many of these cases, when the condition has occurred once, it predisposes to a secondary attack.

DR. MAX THOREK, Chicago: I regret that I did not know that Dr. Pilcher was successful in reducing a twisted stomach. If I had known of it, I would have made mention of it in my paper, because such a step would be the first known in the history of medicine, and it should go on record. We know from our experiences in strangulated hernia, that the patient after taxis remains well for some time. What Dr. Pilcher has done is to diagnose stomach volvulus and reduce it. It should be recorded as a most important accomplishment in the history of gastric surgery. From the patient's point of view, the quicker the situation is diagnosed, the quicker we must operate to save life, because these cases have a tendency to recur. Neither Dr. Pilcher nor any one else can be on hand all the time to detort that stomach, and the volvulus may progress to such a degree that it may be too late to operate. I have never been able to make a diagnosis of volvulus of the stomach before entering the abdomen.

Rest in Tuberculosis.—Rest remains the sovereign remedy for tuberculosis. More direct and spectacular methods of treatment—inhalations, injections, drugs by mouth—come and go: the years since 1900 have spawned hundreds of them. Few have survived the sensation of their momentary announcement; none has earned even a vogue. Rest alone has returned thousands of consumptives to productive life. Of those who, while living an active life, relied on drugs or vapors or "serums" or vaccines to fight their battle, few have made the journey back.—Allen K. Krause.

THE DEVELOPMENT OF INTESTINAL SURGERY*

HARRY HYLAND KERR, M.D., C.M.
WASHINGTON, D. C.

There is no more fascinating story in the history of medicine than the development of intestinal surgery. In the very earliest medical writings occur occasional cases of spontaneous recovery following perforating abdominal wounds. The study of these isolated cases showed that the intestinal wound had agglutinated to the parietes, thus preventing effusion of the intestinal contents into the abdomen. In one of the earliest textbooks, Lanfrank's "Science of Cirurgie," published in 1396, we find the treatment of intestinal wounds outlined in this quaint language:

> Take that one side of mirac (the outer or parietal peritoneum) and siphac (the inner or visceral peritoneum) together, so that they be one. And look that the nedel be three square and then make one point brought together. In the same manner in the other and there thou shalt make there-on as many points as thou thinkest necessary. And when thou hast sewd mirac and siphac together in good manner, then knot the threads together that they unknot not—and let the ends of the threads hang out and then sprinkle upon the sewing the powder consolidatif—and hold open the wound withoutforth till mirac and siphac be perfectly solid.

As we so often see, this ancient teaching survived without question for more than four hundred years.

Fig. 1.—Importance of the fibrous coat in intestinal suture: one suture (white), passing into the muscular coat only; the other (black), passing through the muscular and into the fibrous coat.

Fig. 2.—Importance of the fibrous coat in intestinal suture: the piece of bowel shown in Figure 1 stripped between the handles of a pair of scissors. All coats are stripped off the thin fibrous coat. The white suture anchored in the muscular coat alone is stripped off with that coat; the black suture passing into the fibrous coat remains firmly anchored therein.

It is probable that the success under such surgery did not exceed the spontaneous recoveries which occasionally occur.

The next milestone marking progress is "An Inquiry Into the Process of Nature in Repairing Injuries of the Intestines" by Benjamin Travers, demonstrator of anatomy at Guy's Hospital, London, published in 1812. He made a series of experiments on horses and dogs in which he proved that the healing of intestinal wounds was by agglutination of the visceral peritoneum at the edges of the wound in the intestine to the parietal peritoneum or the peritoneum of the adjacent viscera. He cites many spontaneous cures from penetrating wounds of the abdomen in which at necropsy the perforation was not necessarily agglutinated to the penetrating wound of the abdominal wall.

Fig. 3.—End-to-end anastomosis with interrupted suture: the glycerin with which the bowel is distended can be seen leaking through the suture line.

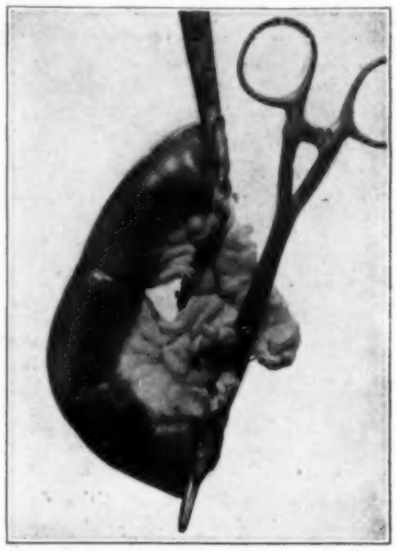

Fig. 4.—End-to-end anastomosis: continuous suture; no leaking.

In considering the prevailing practice at that time, Travers says:

> The suture is recommended and in general that species which we denominate the glover's suture; one or both ends of the thread being included in the external wound, that the gut may be confined to that point and the suture readily withdrawn. It is not the kind of suture employed, but the application of it which is of real importance. It was upon close connection of the injured gut with the parietes exclusively that the union was supposed to depend.

He then discusses the value of agglutination to the surrounding viscera and states that the healing of intestinal wounds in apposition to the parietal wound interferes with the healing of both. To quote again:

> Whenever the suture is decided on it should be complete. The intestines should be returned fairly into the abdomen and the wound of the parietes be treated as if it had not extended beyond them. Let a small round sewing needle armed with a silk thread be passed near to the lines formed at the bases of the everted lips. The thread is to be carried at short regular distances through the whole extent of the wound, the operator being mindful that an equal portion of the edges is included in each stitch. When the suture is finished, let the thread be securely fastened, and cut close to the knot. The reduction of the prolapsed fold should then be conducted with the nicest caution; and when completed, the wound of

*Read before the Section on Surgery, General and Abdominal, at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

the teguments should be treated with a stitch, a plaister, or a poultice as circumstances dictate.

Thus, we see that the knowledge that intestinal wounds heal by agglutination of the peritoneum had been well known to the profession for over 400 years. The only improvement in that time was Travers' study. He showed that it was not necessary to use the parietal

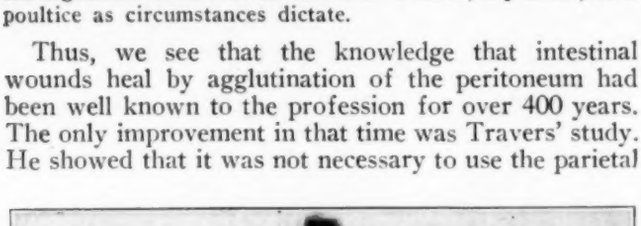

Fig. 5.—Basting stitch method of anastomosis: division of the intestine with cautery knife between crushing clamps.

peritoneum, but one could rely on agglutination to the peritoneum anywhere, and therefore the visceral wound should not be anchored to the parietal wound.

It remained for Antoine Lembert, then an intern in the Charité in Paris, to discover the simple expedient of approximating the peritoneal edges of the wound. In 1826 he published his paper "Nouveau procédé d'enterorraphie" in the Rapport général d'anatomie. I quote from an abstract published one year later:

As many threads and needles are prepared as stitches are required by the extent of the wound. Each stitch is isolated and spaced from the other by four or five lines; no thread should be tied until all are passed, which is done in the following manner: The surgeon, having in his right hand

Fig. 6.—Basting stitch method of anastomosis: basting stitch applied over clamp occluding divided intestine.

a simple needle, in which is a linen or, better, a silk thread, brings the index finger of the left hand into the cavity of the intestine and thus fixes the edges of the wound. It is better to have the edges of the wound stretched by an assistant. The operator buries the needle about the space of two lines from the bloody edge, or he slips the point of the needle between the mucous and muscular membranes, according as the intestine is more or less thick, and he brings it out about one line from the bloody edge, so that the thread takes in a line's space almost of the intestinal wall.

This is the first stitch made. The same needle is directed toward the opposite edge, and is buried about one line from it, crossing completely the wall of the intestine, or simply burying it in the thickness of the muscular and mucous membrane; the needle is then brought out about one line from this first puncture and consequently two lines from the bloody edge, as has been done for the other edge of the wound, in such a way that the same thread penetrates twice into the walls of the intestines and twice comes out. It may be seen that it embraces on the convexity of the intestine, about a line of the cylinder which forms the intestine.

When this thread is tied, each of the walls which it embraces is brought forcibly toward the other, and joins the other with its serous membrane; the free edges of the wound are then found turned toward the cavity of the intestine, where they form a more or less pronounced prominence. To tie the thread, one has an assistant place a "poicon" or any other instrument of similar form on the part which lies between the two sides of the wound. This "poicon" serves to turn the bloody edges toward the cavity of the intestine, and to favor the apposition of the serous membranes. This is done when one ties the ligature.

In cases of transverse division of the intestine, the threads are passed as if the wound were longitudinal, taking precaution to place a thread on each side of the mesentery, and to have the portion of the intestine which they take in correspond on each extremity; one then ties as we have just said, so that the free edges are turned toward the cavity of the intestine, and there forms a circular ridge.

When the intestine is reunited, the threads are cut near the knots, keeping only one to fix in one of the angles of the exterior wound. The others gradually cut through the small portion of the intestine which they embrace, fall into the interior when the local inflammation which they have already caused has provoked in the vicinity plastic exudation, which promptly agglutinates the serous membranes and saves the patient from the dangers of an effusion.

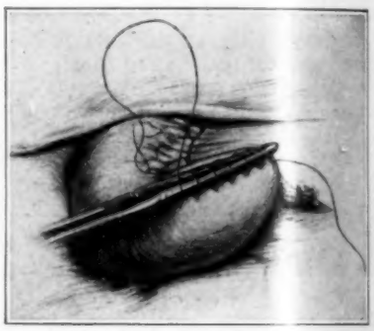

Fig. 7.—Basting stitch method of anastomosis: detail of basting stitch; first and last bites of stitch parallel to bowel axis at free and mesenteric borders, all intervening stitches across bowel axis with loops passing over crushing clamp.

This operation is so simple in dogs that they seem to eat, digest and pass feces the day after operation. Five were operated on and all five survived. In another, sacrificed three days after suture had been made for complete transverse division, the union was already complete and any later effusion would have been impossible; the threads had fallen away. It must be added that the threads were always left in the abdomen after they were cut near the knot, and no inconvenience resulted.

This procedure combines the following advantages: (1) It is easy and promptly executed; (2) it is applicable to all cases of division of the intestines; (3) it does not expose to hemorrhage; (4) it maintains the continuity in so exact a manner that even the gases cannot escape; (5) it causes constriction in only a very small portion of the intestine, and causes only the irritation necessary to produce prompt plastic exudation; (6) finally, it leaves no fault in the conformation in the intestine which injures its function, and it is followed by a cure in a few days.

Thus, nearly a hundred years ago it was shown that intestinal wounds heal not by reciprocal healing of adjacent cut edges but by adhesion of the inverted peritoneal coats.

The discovery of this fundamental principle of intestinal surgery made possible operative procedure

in many intra-abdominal lesions. However, it was not till the era of antisepsis inaugurated by Lister that Lembert's teachings were frequently applied. As experience grew, many methods of anastomosis and suture were advanced. In 1892, Murphy invented his famous button. This automatically united all coats of the intestine and held them in approximation till the union was firm. It is one of the most brilliant contributions ever made to surgery. The button, in addition to being ingenious, fulfilled what may be termed the surgical principle of intestinal anastomosis, i. e., the infolding of the bowel wall throughout its circumference, and fixation till firm healing was complete. The button advanced intestinal surgery more than any other factor. Murphy might be said to have popularized intestinal surgery. The necessity of intestinal resection had no terrors for the surgeon who had a button handy.

The suture method then gradually replaced the button, and the literature became rich with methods of performing intestinal anastomosis. There have been described about 250 different methods of intestinal suture in the past century.

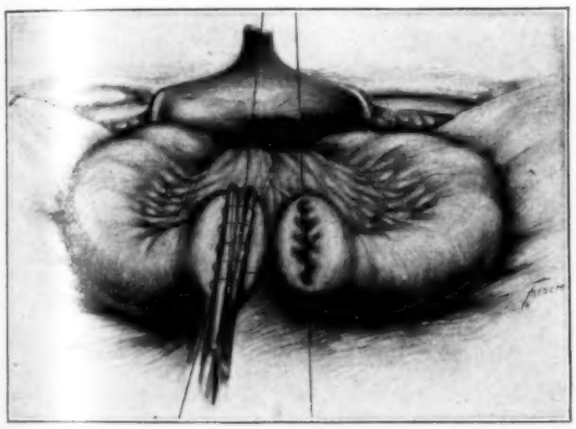

Fig. 8.—Basting stitch method of anastomosis: crushing clamp withdrawn from beneath basting stitch, and basting stitch drawn tight, inverting divided ends of intestine.

Successful intestinal surgery depends on a clear appreciation of the anatomic, physiologic and hydraulic factors concerned.

Of the five histologic coats of the intestinal wall, only two are of surgical importance, the peritoneal and the fibrous. As Lembert pointed out many years ago, it is by the agglutination of the peritoneal walls that union takes place. Many of the older methods of anastomosis failed because they did not succeed in approximating the peritoneal coats at the mesenteric attachment. It is necessary that the entire circumference of the stoma be covered with peritoneum. This can be accomplished only by infolding the entire wall at its mesenteric attachment.

The value of the fibrous coat to the bowel in surgery is probably not sufficiently appreciated. The simple experiment of pulling a piece of intestine between the handles of a pair of scissors, thus stripping off the outer peritoneal and muscular coats and the inner mucous coat, demonstrates the tough fibrous tube which is the real histologic foundation of the bowel. Into this coat every intestinal suture should pass; when so anchored, there is no danger of the stitch tearing out or of leakage occurring. When, in addition, the uniting suture is not only anchored in the tough fibrous coat of the bowel, but at the same time invaginates the peritoneal coat so that the walls of the stoma are completely surrounded by the peritoneum, only one suture is required. The usual two or three layers of sutures are unnecessary unless they are placed in separate coats of the bowel wall. One absorbable suture which unites

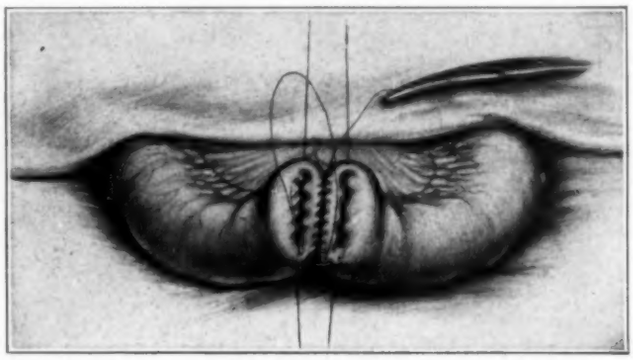

Fig. 9.—Basting stitch method of anastomosis: inverted bowel ends suspended on basting threads, and anastomosing suture started.

the fibrous coat and invaginates the peritoneal coats is all that is required, even in stomach resection.

To fulfil the requirement of uniting the approximated edges, some of the bowel wall must be turned into the lumen. This fringe of united bowel wall forms a partial diaphragm, depending on the amount turned in and the diameter of the stoma. Should the diaphragm be excessive, it is possible that it might offer obstruction to the intestinal contents, or form a constriction of the lumen where subsequent obstruction might occur. Such an occurrence is obviated by enlarging the stoma to a size greater than the diameter of the bowel. This is accomplished by dividing the intestines, not transversely to the long axis as is our usual habit,

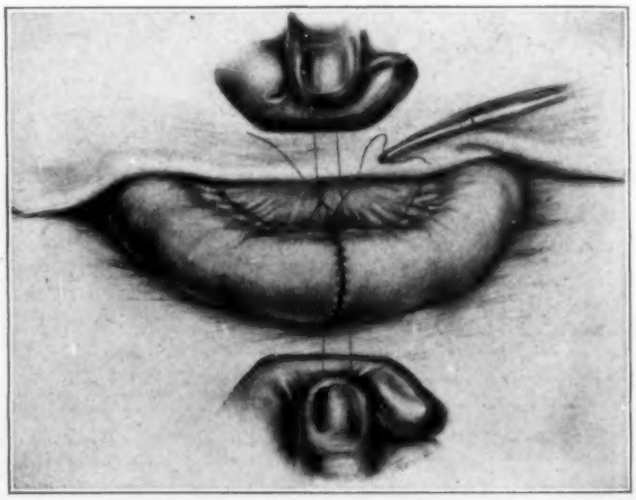

Fig. 10.—Basting stitch method of anastomosis: anastomosis complete; ends still occluded by basting stitch.

but at an angle of 45 degrees. The area of the opening thus produced is just twice that of the opening on transverse section. Of course, such an incision is made with the acute angle of the mesenteric side so that the blood supply of the end of the bowel is preserved. When the two ends are jointed, no angulation occurs. Since the fanning of the mesentery prevents any part of the

intestinal tube extending any farther from the root of the mesentery than any other, angulation in the plane of the mesentery is impossible. The united tips of the sutured bowel, on the other hand, angulate into the mesentery toward its root. We have, therefore, as a result of the union of two pieces of bowel, a straight, free border and an angulated mesenteric border. An anastomosis made in this way has a stoma just twice the

Fig. 11.—Basting stitch method of anastomosis: basting stitch being withdrawn.

size of the lumen of the anastomosed bowel. Even excessive invagination into such a lumen could not form a diaphragm. The chances of obstruction, therefore, at the site of the suture are reduced to nil.

A law of hydraulics states that the circumferential or bursting pressure in a tube is twice the longitudinal pressure. Applying the law to the intestinal tube, the usual pressure exerted therein from peristaltic action is multiplied by two as a distending force. Any wound, therefore, of the intestinal wall is subjected to a force which tends to stretch that wound of the wall across the axis of the intestine. Such a wound should be

Fig. 12.—Basting stitch method of anastomosis: lumen reestablished, separating crushed ends by inverting bowel wall through stoma.

closed in a transverse direction by a continuous suture. The distending force, if applied to such a closure, would tend to lengthen the wound, stretch the suture and tighten the closure. In perforating wounds, such a closure encroaches less on the lumen than a longitudinal closure. In intestinal anastomosis, for similar reasons, the ideal closure is at right angles to the long axis of the bowel, and is performed with a continuous suture. Any force acting from within the lumen will tend to distend the bowel at the site of the suture, stretch the continuous stitch, and automatically tighten the anastomosis. It can therefore safely be said that all intestinal anastomisis should be end to end, made with a continuous, absorbable suture passing into the fibrous coat and uniting the intestinal walls, so that there is an approximation of the peritoneal coats throughout the complete circumference.

Through the long development of methods of intestinal anastomosis, the aims of surgery have gradually changed. In the early days, prevention of effusion of intestinal contents into the abdominal cavity, even at the expense of a fistula, was the first consideration. Then direct union of the divided intestine with a minimum of complications was the chief aim. As these difficulties became mastered, an aseptic method was sought.

In elective intestinal surgery, the technic of laparotomy is nearly perfect till the lumen of the bowel is opened. Then the entire operative field is exposed to contamination. It is true that this difficulty is usually successfully obviated by protecting the operative field from the open lumen by gauze pads and dressings, by changing instruments, by gloves, and by other aseptic measures. Nevertheless, there is a definite break in an otherwise efficient technic as soon as the operative

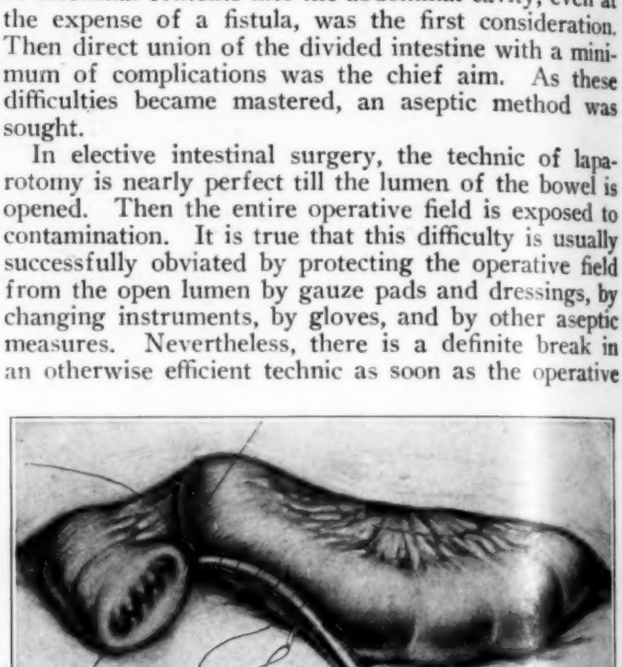

Fig. 13.—Basting stitch method of anastomosis: end-to-side anastomosis, crescent of free border of bowel having been removed with the cautery.

field is open to contamination from exposure of the bowel lumen.

Can intestinal union be accomplished by a method that is aseptic, practical and applicable to all forms of anastomosis?

BASTING STITCH METHOD

In 1907, E. M. Parker and I suggested the basting stitch method of intestinal suture, based on experiments carried out on dogs. We said:

It consists essentially in the use of the Cushing continuous stitch, without knots, to temporarily close the intestinal incision, a separate stitch being used for each of the two visceral openings that are to be sewn together. These stitches remain in place only while the permanent sutures are being applied. On account of their method of application and temporary purpose which they serve, they bear a certain likeness to the "basting" stitches of the seamstress, and for convenience we have called them by that name.

The steps of the operation and the advantages which we believe it to possess may be briefly summarized as follows:

Division of the intestinal walls is made between two narrow-bladed crushing clamps placed first in actual contact and then slightly separated so that there is left between them a narrow crushed area, consisting practically of serosa and fibrous coat, which may be divided by knife or cautery.

The basting stitch is a Cushing continuous stitch without knots, placed upon the clamped incision with loops between

the stitches crossing over the blades of the clamp. When the clamp is removed and the stitch at the same time drawn tight, the edges of the incision are automatically inverted and held firmly pressed together in a straight line without any separation of the lips of the opening having occurred. The two incisions, so prepared, are then placed side by side, and are stitched together around the whole circumference of the intestinal tube or of the new operative opening that is to be established. When the last suture has been placed and tied, the basting stitches are cut short and withdrawn; the intestinal canal, or the new anastomotic stoma, then instantly becomes patent. This completes the operation as far as suture of the intestines is concerned. The lumen has not been opened and it has not been entered by any instrument or other object. The stoma becomes open only with the withdrawal of the basting threads. The steps of the operation are essentially the same whether circular, lateral or end-to-side anastomosis is done.

Fig. 14.—Basting stitch method of anastomosis: end-to-side anastomosis; anastomosing stitch being applied.

The operation so performed calls for no time consuming maneuvers and no more than ordinary manipulative skill. The basting stitches are as easily and as quickly placed as the purse-string suture used to turn in the stump of the appendix or grasp the Murphy button. Upon removal of the clamp the stitch is at once drawn tight by a single motion and the incision, securely closed in a straight line, is then ready for suturing without further attention. The turning in of the cut edges which takes place is automatic and never requires the use of an instrument to assist it as in the case of the purse-string suture.

With the basting stitches in place, intestinal suture becomes singularly free from its usual difficulties. Only a single assistant is ever needed, and even he may be readily dispensed with. The parts to be joined are held in the most convenient position and under perfect control, so that the stitching is done with surprising rapidity and ease.

The troublesome eversion of the mucosa and the vermicular contractions of the muscular coats no longer exist. Approximation of the serous surfaces to any desired extent and at a uniform distance from the margins of the incision is assured. The inversion of the cut edges presents a folded wall through which to pass the stitches, making precision in their application, with secure anchorage in the fibrous coat, particularly easy.

Handling of the intestines is reduced to a minimum. The hands of the operator need scarcely touch them, and those of the assistant not at all.

In the end-to-end suturing the small triangular peritoneal defect at the mesenteric border is automatically obliterated by the basting stitch insuring apposition of the serous surfaces at this point.

A striking advantage of the method is seen when two incisions to be joined happen to be of unequal length. In this case the longer one is simply puckered or "gathered" in upon its basting thread until it corresponds in length with the shorter incision and the sutures are then applied. We have successfully united in this way without the slightest difficulty intestinal incisions, one of which was double the length of the other.

RESULTS

Since 1907, the method has been put to numerous tests in performing anastomosis between all the hollow viscera of the abdomen. When the operation is carried out as described by us, a failure has never been known. In two cases obstruction occurred, owing to the invagination of too much of the bowel wall, with the formation of an obstructing diaphragm. With the section of the bowel at an angle, rather than transversely across the axis, a stoma of sufficient size is produced to obviate that danger completely.

The method is used in all our intestinal work. End-to-end, end-to-side, and side-to-side suture is easily performed. Cholecystenterostomy is readily accomplished with one single No. 0 chromic catgut suture. Likewise, gastric resection with a single catgut suture properly placed is eminently successful. In stomach surgery, it is not wise to rely on the crushing of the Payr clamp or the cooking of the cautery knife to control hemorrhage. The crushed and cauterized edge must be inspected and bleeding points ligated before invagination with the basting stitch.

In low resection of the large bowel, the suggestion of Balfour of passing a rectal tube to above the stoma, after the anastomosis is accomplished, is adopted unless there has been a previous cecotomy.

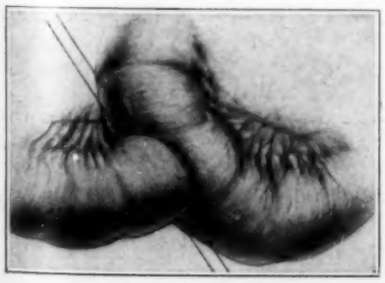

Fig. 15.—Basting stitch method of anastomosis: end-to-side anastomosis; anastomosis complete.

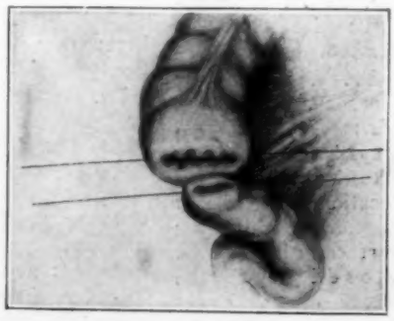

Fig. 16.—Basting stitch method of anastomosis: end-to-end anastomosis between bowel of unequal diameter.

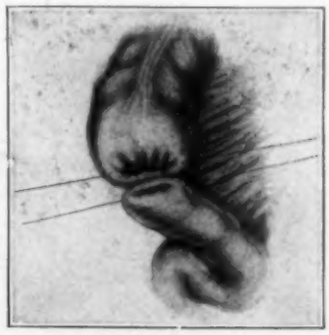

Fig. 17.—Basting stitch method of anastomosis: end-to-end anastomosis between bowel of unequal diameter; large bowel gathered on its basting thread to conform with small bowel.

CONCLUSIONS

1. The history of intestinal surgery is punctuated by the gradual establishment of definite surgical principles.

2. Intestinal wounds heal, not by reciprocal healing of adjacent cut edges, but by adhesion of the inverted peritoneal coats.

3. Each bite of the suture should be securely anchored in the fibrous coat, thus necessitating only one suture.

4. All openings of the intestine, whether perforations or anastomoses, should be closed transversely by a continuous suture.

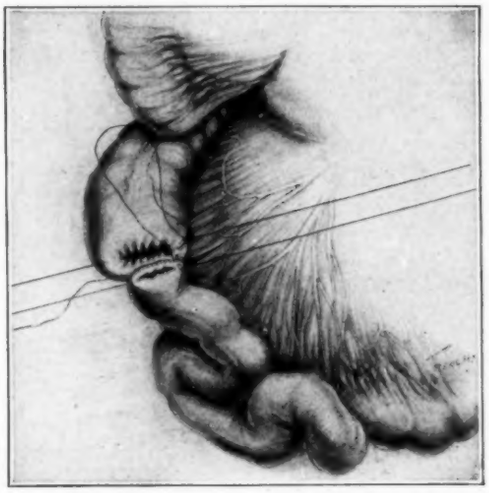

Fig. 18.—Basting stitch method of anastomosis: end-to-end anastomosis between bowel of unequal diameter; anastomosing stitch being applied.

5. Ideal aseptic intestinal resection is readily performed by the basting stitch method.

6. The method is applicable to all forms of anastomosis of viscera covered by peritoneum.

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ABSTRACT OF DISCUSSION

Dr. Harold Brunn, San Francisco: Dr. Kerr's method was adopted at the university clinic in San Francisco several years ago, but we did not know then that he was responsible for it. We heard of his work, done with Dr. Parker, only a few years ago. This method, it seems to me, is an improvement of Halsted's method.

Fig. 19.—Basting stitch method of anastomosis: end-to-end anastomosis between bowel of unequal diameter; anastomosis complete.

Dr. J. Shelton Horsley, Richmond, Va.: We should always bear in mind, in intestinal surgery, the location of the site of operation. All raw surfaces should be closed before the lumen of the bowel is opened. When the lumen of the bowel is opened, the slightest amount of bowel content that gets into the mesenteric tissue will produce an infection that will cause a leak. That leak is not due so much to inefficient suturing as to the fact that the surgeon infects the field, and infected sutures break down. The continuous mattress suture, as Dr. Kerr demonstrated, is a valuable suture in intestinal surgery, but we cannot make a constant rule for suturing or recommend any one standard method that can be applied to any portion of the intestine. The results that Dr. Kerr and Dr. Brunn have shown are excellent, and this method of suture would be effective in inaccessible parts of the intestine, such as the lower sigmoid, where other methods will fail. We must remember, however, that, beginning at the jejunum and going down to the rectum, the tissues, function and bowel contents change. If we make an anastomosis and get too much of a diaphragm in the upper portion of the jejunum, we are very likely to get an obstruction. Many surgeons say that in operating on dogs they can turn in as much bowel as they wish. This is true in dogs but not in human beings. I lost a patient from this error. Dragstedt of the Department of Physiology of the University of Chicago has called attention to the fact that very little obstruction in the upper portion of the jejunum or duodenum will produce a fatal result, but the same obstruction may be borne farther down in the ileum. At the ileocecal valve it is better to follow nature, and a slight intussusception, as pointed out by Kellogg, is advisable. In resections of the large bowel, I believe that the end-to-end method should be used, whenever possible. In this region, where sepsis is so likely to occur and where bacteria are teeming in the fecal contents, we must be particularly careful about infection; but in the upper jejunum or in the stomach, where there is very little bacterial content, we can, if necessary, take more chances. Why do we have so many fistulas following resections of the large bowel? Because of the great bacterial content and

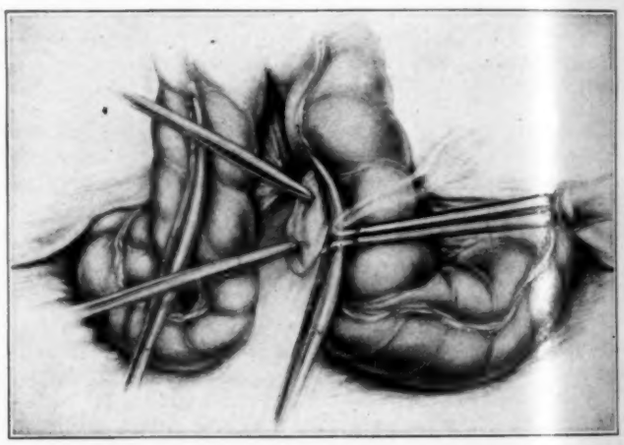

Fig. 20.—Basting stitch method of anastomosis: end-to-end anastomsis; crescent of free border being excised with cautery.

because we have not been careful to exclude infection during the operation.

Dr. Foster K. Collins, Los Angeles: I have been greatly interested in aseptic intestinal anastomosis. Surgeons are demanding some technic that is aseptic, and methods of end-to-end anastomosis, in order to avoid stasis later on. In December, 1922, I published in the *Annals of Surgery* a technic that differs from Dr. Kerr's in that it is simpler, safer and quicker, and involves less handling of the intestine. The important point is to ligate the vessels to the intestine and the resection is done where the circulation is demonstrated to be good. At the points selected for resection the intestine is crushed lightly. In this crushed tract I tie tightly about the intestine a simple loop of strong, light tape. Then I place over this ligature a moderate size Kocher clamp with its tip at the mesenteric border of the intestine. The clamp so placed remains until all suturing has been completed. It prevents the cautery from burning the ligature, and after the portion of intestine is resected by cautery, the two clamps are held in one hand approximating the ends perfectly for end-to-end anastomosis with no handling of the remaining intestine. With this method there is no cuff to be turned back; there is no chance of leakage at any stage of the operation. After suturing, the clamps are loosened and pulled out between the stitches, and a purse-string suture closes the point where they were removed. The looped ligatures are then

easily removed by a gentle pull as they protrude between the stitches, fully opening the lumen of the bowel.

DR. R. C. COFFEY, Portland, Ore.: I want to raise a protest at the recommendation of end-to-end anastomosis as a general rule. The earlier years of my work were devoted entirely to dog surgery. I went through all this experimental work with end-to-end anastomosis, by suture and with the Murphy button, and after doing nearly 1,000 experimental operations I decided that an end-to-end anastomosis was not as safe

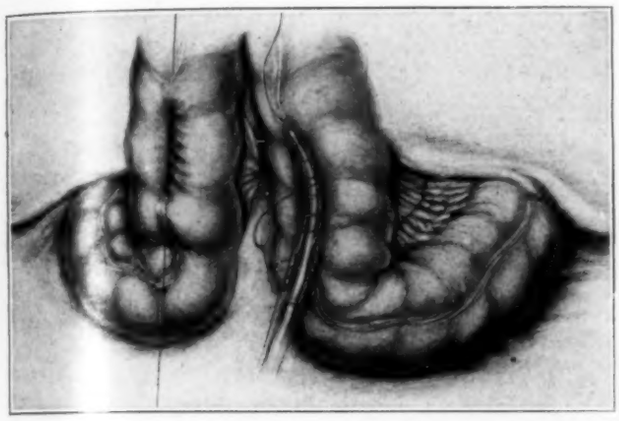

Fig. 21.—Basting stitch method of anastomosis: side-to-side anastomosis; basting stitch applied.

as a side-to-side anastomosis and that the Murphy button was even more unsafe. What is the trouble with the lateral anastomosis? You say that it dilates. When does it dilate and why? It is not the distal segment that dilates, it is the proximal segment. You put two ends of the intestine together side by side and it is the proximal end that dilates because the peristaltic waves come down from above and produce a dilatation. The distal segment does not become dilated. You must, therefore, protect the proximal blind end by oversuturing, shortening and covering it with omentum, thus preventing dilatation. In that way can be prevented the dilatation that has been the bane of lateral anastomosis which is a safer operation in the hands of the average operator.

DR. HARRY H. KERR, San Francisco: In view of Dr. Coffey's discussion, the presentation of this method of intes-

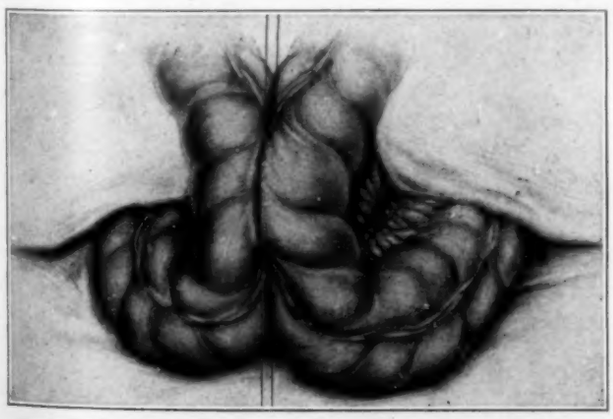

Fig. 22.—Basting stitch method of anastomosis: side-to-side anastomosis; anastomosis complete; basting stitch not yet withdrawn.

tional anastomosis is worth while. I feel very definitely that the modern demand is for surgery that follows the laws of physiology. Side-to-side anastomosis should be discarded, except for rare cases when circumstances may demand it. Aseptic end-to-end anastomosis, with the inversion of the intestinal walls, circular suture of the fibrous coat and a stoma that is larger than the original diameter is the ideal to which we should aim.

FUNGOUS DISEASES OF MAN IN THE STATE OF NEBRASKA

SPOROTRICHOSIS; BLASTOMYCOSIS; ACTINOMYCOSIS *

MICHAEL G. WOHL, M.D.
OMAHA

It is rather surprising that the study of fungi has received comparatively little attention, although the early demonstration of micro-organisms as the etiologic factor of disease was the discovery of a fungus by Schoenlein in 1839, in a case of favus. Even today, the occurrence of diseases caused by pathogenic fungi is considered very rare, which is probably due either to mistaken diagnosis or to failure of men to report these cases. The committee on statistics of the American Dermatological Association reports [1] the occurrence of blastomycosis in 1921 as 0.4 per thousand (or twenty-one cases out of the total of cutaneous cases reported), and sporotrichosis, 0.1 per thousand (or six cases out of

Fig. 1 (Case 2).—Lesions of sporotrichosis.

the total number of cases reported). The ratio of these diseases is practically identical with those of 1916 or the period 1898-1911.

The Middle West constitutes the main source of supply of these cases. The number of reported cases is, however, too small to give a true estimate of its occurrence. Within the last five years there came under my observation eleven cases of fungous disease all from the state of Nebraska. Other cases of fungous disease reported from Nebraska have been compiled from the literature; the essential points of these are given in the table (Cases 1 to 8).

Through letters sent to representative men of the profession and by means of the state medical journal, I was able to compile nine additional unpublished cases,

* Because of lack of space, this article is abbreviated in THE JOURNAL. The complete article appears in the Transactions of the Section and in the author's reprints.

* Read before the Section on Pathology and Physiology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

1. Pollitzer, Sigmund: Report of the Committee on Statistics of the American Dermatological Association for the Year 1921, Arch. Dermat. & Syph. 7:99 (Jan.) 1923.

as analyzed in the table (Cases 9-17). The total number of cases is twenty-eight, including my cases.

The criteria that I adhered to for placing the cases in this group are: (1) the bacteriologic demonstration of the causative micro-organism; (2) the clinical appearance of the lesions, and (3) the course of the disease. Sixty-eight cases communicated to me were eliminated from this study because the causative organism was not demonstrated in the lesions, although in more than half of these cases the lesions healed under potassium iodid, yet from the description given they might equally well have been infectious granulomas.

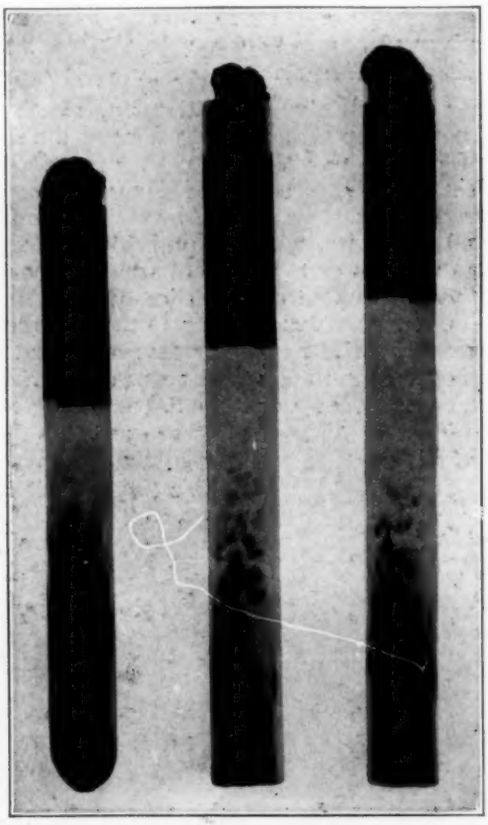

Fig. 2.—Glucose agar cultures of sporotricha: The colonies have a wrinkled appearance; dark-brown pigment formed within the course of eight days.

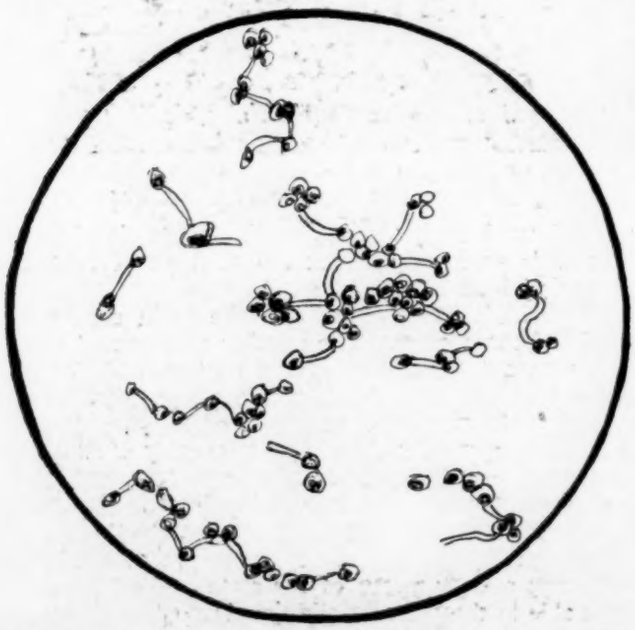

Fig. 3.—Hanging drop preparation from bouillon culture in sporotrichosis.

Under the name of fungous diseases or oidiomycosis may be included: (1) sporotrichosis, (2) blastomycosis, (3) actinomycosis and (4) coccidioidal granuloma.[2] These diseases are considered conjointly because, clinically, they present a more or less similar picture, and are often mistaken for such diseases as tuberculosis, syphilis or epithelioma; secondly, therapeutically they yield in the great percentage of cases to heavy doses of potassium iodid. They are occasioned by fungi which, although having fine points of differentiation, yet possess characteristics common to all.

SPOROTRICHOSIS

Sporotrichosis has been known since 1898; although first described in America, the exact bacteriologic aspects of the disease have been thoroughly worked out by European investigators, among whom de Beurmann and Gougerot[3] have contributed largely; hence the name of the organism, *Sporothrix beurmanni*. The first cases in this country were described by Schenck.[4]

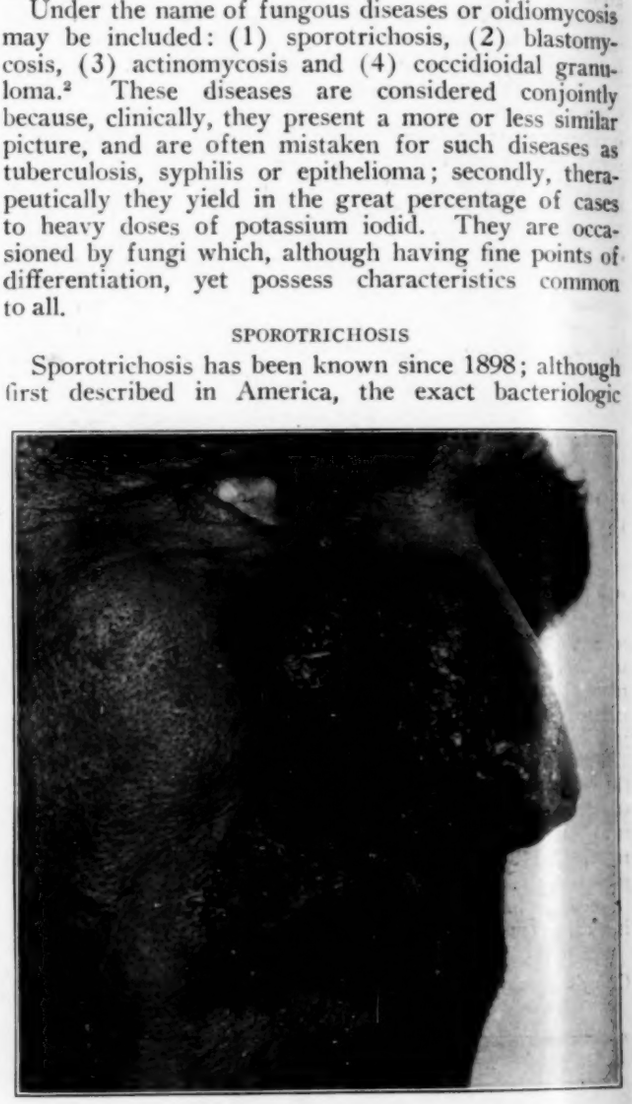

Fig. 4 (Case 8).—Skin lesions of blastomycosis.

The condition primarily affects the skin, involvement of internal organs and generalized septicemia being unusual. In the group of my cases, involvement of the upper extremities was predominant; in one patient, the left lower extremity was primarily involved.

CASE 2.—F. A., school girl, aged 8 years, a patient of Drs. Tyler and Blackman, had been noticed by her mother, six weeks previous to consulting a physician, to have a red spot the size of a half dollar on the external malleolus of the left ankle. A week later a "pimple" formed in the center. It increased in size, and at the end of two weeks it broke open and discharged a thick, yellow material. When the patient

2. The last named disease is not treated in this paper, since no case of coccidioidal granuloma was observed in the state.
3. De Beurmann and Gougerot: Les sporotricoses, Paris, 1912.
4. Schenck, B. R.: Bull. Johns Hopkins Hosp. **9**: 286, 1898.

was first seen she had an ulcer the size of a silver dollar over the left outer malleolus. The base of the ulcer presented a granulating surface with the edges thickened. There were eighteen nodules along lymphatics from the ankle to the groin. The nodules were the size of a cherry, movable under the skin, and rather painful. The mother stated that the girl had struck her ankle against a door several days before the spot was noticed, and that a break in the skin had resulted.

A smear obtained from the primary lesion was studied unstained, with the addition of a drop of 10 per cent. potassium hydroxid, also stained by dilute carbolfuchsin. The smear showed elongated, sausage-like and filamentous forms; along the sides of the filaments there were oval, refractile bodies. Stained smears showed pus cells and filaments of sporotricha. Cultures showed staphylococci. The blood of the patient gave agglutination with a known sporotrichum culture in a dilution of 1:80; the macroscopic method was employed. The child was placed on potassium iodid and roentgen-ray treatment used locally. The lesion completely disappeared within four weeks.

The disease seems to be of early life, the youngest patient in our series being 9 years of age, and the oldest 41. The male sex predominated. The lesions started with the formation of a hard nodule, in three cases the primary origin being at the wrist, in one the little finger of the right hand, and in one the left ankle. The

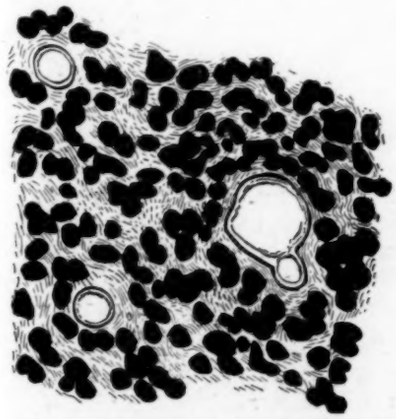

Fig. 5.—Direct smear from pus from blastomycotic lesion.

nodules at first were painless until they ruptured, forming punched out ulcers; two patients complained of pain at the primary site; secondary nodules formed along the subcutaneous lymphatics. The largest number of the nodules was eighteen; the average number, seven. The nodules were somewhat hard in consistency, and not tender to the touch; the size of the nodules varied from that of a pea to that of a large olive. It is a remarkable fact that the true condition of these cases was unrecognized until the bacteriologic examination was made; the lesions invariably became aggravated after they were curetted. Material for microscopic study was obtained by means of sterile hypodermic syringes from the nodules. It has been my experience that the search for the organism in the primary sore, the so-called "chancre," is attended with little success. Direct slides are best studied by application of 10 per cent. sodium hydroxid solution; other slides are stained with a weak solution of carbolfuchsin. In one case the direct smear showed short filaments, with refractile bodies interspersed in the meshes of the filamentous forms.

Cultures were made on glucose agar, Loeffler's medium and glucose bouillon; within four or five days there appeared on the solid mediums small, white colonies, which later became wrinkled and leathery. In the broth there were white, cotton-like flakes; smears from solid mediums showed mycelia with many spores adherent. The organisms stained rather deeply with weak carbolfuchsin and Gram stain. Colonies on all of

Fig. 6 (Case 9).—Actinomycosis of right submaxillary region.

the solid culture tubes of four cases have become pigmented in the course of from eight to ten days, the pigment varying from light brown to a dark chocolate.

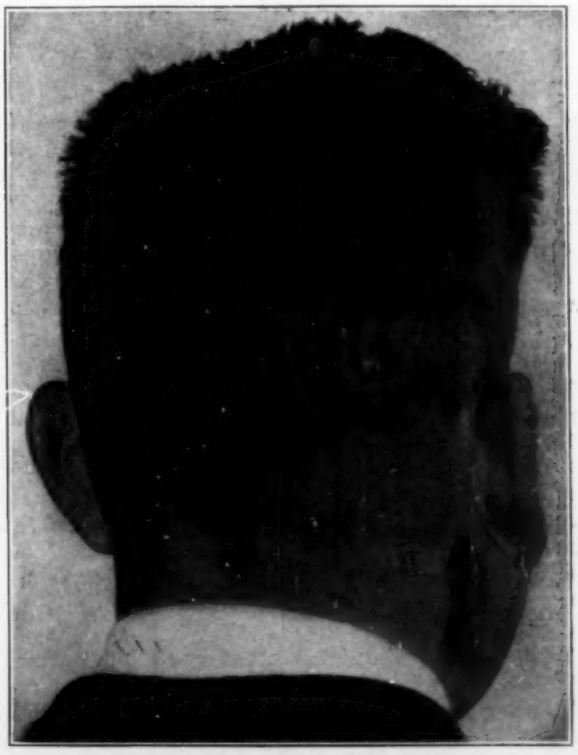

Fig. 7 (Case 10).—Actinomycosis.

The pigment was firmly attached to the medium, penetrating it to some depth, so that in removing it one had to tear the medium. The cultures from two of our cases failed to show pigmentation.

Gougerot, Matrouchot and others [7] have utilized the characteristics of pigment formation as well as the formation of chlamydospores (unusually large sized spores) and that of pleomorphism to differentiate the American species—*Sporothrix schenckii*—from that of the European, *Sporothrix beurmanni*.

From the study of my cultures and from the publications of Trimble, Hamburger, Davis [8] and Meyer and Aird,[8] it appears that these characteristics, particularly that of pigmentation, are not always absent in the American species, and, as Meyer and Aird have suggested, the organism is best called *Sporothrix beurmanni-schenckii*.

The slowness of the progress of the disease is undoubtedly accounted for by the formation of immune bodies. In three cases we obtained a definite agglutination of sporotricha with patient's serums in dilutions of 1:200, 1:100 and 1:80, respectively. In a fourth case (Dr. Gifford's) the agglutination proved slightly positive in a dilution of 1:10 on several occasions, although cultures showed a luxuriant growth of nonchromogenic sporotricha. This method has been suggested as a practical aid in the diagnosis of the disease.

Fig. 8.—Direct smear from pus from actinomycotic lesion, showing mycelial structures.

BLASTOMYCOSIS

Since Gilchrist,[9] in 1894, described the first case of blastomycosis occurring in America, numerous investigators have made an intensive study of the condition. It is noteworthy that the majority of cases published in the early literature occurred in Chicago and its vicinity (Wells, Hyde, Montgomery and others); hence the name "Chicago disease." The number of cases involving the skin first predominated; yet, as Osler [10] states, involvement of the internal organs occurs in 40 per cent. of the cases. The actual presence of the organisms in the blood has been demonstrated. Bushke obtained pure cultures from the blood in his case, and Irons and Graham found blastomycetes in the blood vessels and microscopic sections.[11] Among the internal organs most frequently involved are the lungs, pleura and bones.

Involvement of the meninges, brain, kidney, testis and prostate have been observed. The systemic cases are 90 per cent. fatal, the patient usually dying with the clinical picture of tuberculosis.

7. Quoted by Meyer, K. F., and Aird, J. A.: Infect. Dis. **16**: 399, 1915.
8. Cited by MacLean, E. H.: An Additional Case of Sporotrichosis, J. A. M. A. **69**: 1774 (Nov. 24) 1917.
9. Gilchrist: Bull. Johns Hopkins Hosp. **7**, 1896.
10. Osler: Modern Medicine **1**: 1053.
11. Cited by Hektoen, Ludvig: Systemic Blastomycosis and Coccidioidal Granuloma, J. A. M. A. **49**: 1071 (Sept. 28) 1907.

Bearing in mind that the lesions in systemic blastomycosis consist of areas of consolidation and abscesses, and that the clinical symptoms are cough, expectoration of a sanguinopurulent material, fever which is highest at night, emaciation and asthenia, one can readily understand how a case of blastomycosis can be diagnosed as one of pulmonary tuberculosis.

Fig. 9.—Crushed granules of Actinomyces.

The ultimate diagnosis rests on a microscopic examination of the sputum, mixed with potassium hydroxid. The fungi may also be demonstrated in the feces and urine as well as in the sputum.

The clinical picture of the skin lesions are illustrated by the three cases that came under my observation.

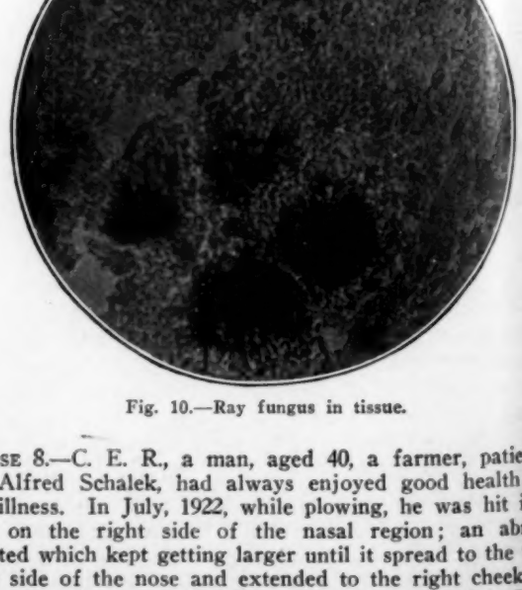

Fig. 10.—Ray fungus in tissue.

CASE 8.—C. E. R., a man, aged 40, a farmer, patient of Dr. Alfred Schalek, had always enjoyed good health until this illness. In July, 1922, while plowing, he was hit in the face on the right side of the nasal region; an abrasion resulted which kept getting larger until it spread to the whole right side of the nose and extended to the right cheek. He appeared to be in good health except for the lesion. It was red, raised and of papillomatous character. Along its edges there were multiple minute abscesses; the patient complained

of some pain and itching in the right side of the face. When the lesion was pressed, there exuded a thick, tenacious pus. Direct slides were made by Dr. Schalek, to which a few drops of 20 per cent. potassium hydroxid solution were added, and blastomycetes were easily demonstrated on the slide. Cultures were not made.

The patient was placed on potassium iodid internally, and local applications of 1 per cent. copper sulphate solution. The lesion healed sluggishly. The roentgen ray was used in addition, and within six weeks from this time the lesion healed. March 13, the patient showed a nodule the size of a pea about one-half inch from the primary nodule; it was painless and reddened. A drop of pus which exuded from it revealed, on microscopic examination, double refractile bodies of the blastomyces type. Treatment was resumed, with good results.

The first and second cases (Cases 6 and 7) yielded good results under the classical treatment of Bevan,[14] 1 per cent. copper sulphate solution locally and increasing doses of potassium iodid internally. To be effective, the iodids are to be given in large doses; the second patient took 300 grains (19.5 gm.) a day for many days, and only once showed symptoms of iodism.

The material obtained from the lesions of these patients was studied in fresh slide preparations made by adding 20 per cent. sodium hydroxid solution, and also stained with weak gentian violet. Cultures were made on glucose agar, which medium was found to give the best results. Cultures were obtained in Cases 6 and 7.

The stained slides revealed oval bodies from 10 to 15 microns in size; they appeared in pairs, and several of them showed budding. The central part of the organism was granular. The capsule in the unstained slides appeared refractile.

It was rather difficult to obtain pure cultures, as they showed staphylococcic and diplococcic contamination.

Cases of Fungous Disease Reported from Nebraska

Author and Reference	Patient's Age	Patient's Sex*	Occupation	Location of Lesion	History of Trauma	Duration of Symptoms	Bacteriologic Findings	Comment
1. Gifford, Harold: Ophth. Rec. **19**: 573 (Nov.) 1910	18	♀	Housemaid	Left eye; conjunctiva	None	4 mo.	Cultures revealed nonpigmented sporothrix	The author relates five more cases; the lack of bacteriologic evidence, however, prevents their being classed as cases of sporotrichosis
2. McLean, E. H.: J. A. M. A. **69**: 1774 (Nov. 24) 1917	33	♂	Laborer	Neck below left ear	None	?	Pigment forming sporothrix in culture	Duration of symptoms not known; patient, from South Dakota, disappeared after diagnosis; patient had lesions three weeks before consulting physician
3. Dermody, L. A., and McMartin, Charles: J. A. M. A. **63**: 1028 (Sept. 19) 1914	35	♀	Housewife; lives on farm	Middle finger of left hand	None	5 mo.	Culture showed nonpigmented sporothrix	
4. Watson, E. A.: Nebraska M. J. **7**: 282 (Aug.) 1922	25	♀	Housewife; lives on farm	Left arm	None	8 mo.	Culture showed sporothrix	Author reports four aditional cases that came from same territory within a radius of 20 miles; it is to be regretted, however, that no bacteriologic examination was made, nor is the description of the clinical picture convincing enough to place them in the class of sporotrichosis; in the case cited the author informs me the word "spores" in the text should read "sporothrix."
5. Gifford, S. R.: Arch. Ophth. **51**: 540 (Nov.) 1922	8	♂	School boy	Left lacrimal sac	None	6 mo.	Sporothrix schenckii in culture	The author mentions briefly two other ocular cases, but demonstration of sporothrix was unsuccessful
6. Mullin: Western M. Rev. **13**: 482, 1908	36	♀	Housewife; lives on farm	Left molar region	None	6 mo.	Blastomyces demonstrated in direct smear	
7. Langdon, J. F.: Nebraska M. J. **7**: 172 (May) 1922	41	♂	Laundryman	Index finger	Yes	4 mo.	Blastomyces demonstrated in smears	
8. Baskin, M. J.: J. A. M. A. **78**: 1367 (May 6) 1922	35	♂	Farmer	Left hand	None	1 mo.	Ray fungus demonstrated in direct smears	
9. C. G. Moore (Fremont) Personal communication	22	♂	Laborer, feeding cattle	Right inguinal gland	None	2 mo.	Cultures showed nonpigmented sporothrix	Seven nodules
10. C. D. Eby (Leigh) Personal communication	55	♀	Housewife	Ring finger, right hand	Yes	3½ mo.	Smears and cultures showed sporothrix	Six nodules; injured while washing dirty clothes
11. J. Burghoff (Omaha) Personal communication	47	♂	Launderer	Index finger, left hand	Yes	3 mo.	Cultures showed pigmented sporothrix	Twelve nodules
12. C. G. Moore, Personal communication	25	♂	Farm hand	Right forearm	None	10 wk.	Cultures showed sporothrix	Six nodules
13. R. Reed (McCook) Personal communication	16	♂	Farmer boy	Dorsum, right hand	None	3 mo.	Cultures showed sporothrix	Three nodules
14. J. M. Willis (McCook) Personal communication	20	♀	Works on farm	Left hand	None	3 mo.	Cultures showed sporothrix	Fifteen nodules
15. F. Clark (Omaha) Personal communication	8	♂	School boy	Index finger, left hand	None	2 mo.	Culture showed sporothrix	Six nodules
16. W. I. Devers (Upland) Personal communication	26	♂	Garage man	Neck, right side	None	8 wk.	Blastomyces demonstrated in cultures	Small abscesses in vicinity of lesion
17. A. F. Tyler (Omaha) Personal communication	18	♂	Farmer	Left side of face	None	8 mo.	Actinomyces bovis demonstrated in smears	Lump under angle of inferior maxilla

* In this column, ♂ denotes male; ♀, female.

In Case 6, I succeeded in getting a pure culture after eight platings, using high dilutions. After the fifth day the pure growth showed colonies that were at first yellowish white and glistening; later they assumed rather a wrinkled appearance; they were firmly adherent to the agar medium. Slides made from colonies revealed budding cells intermixed with mycelial filaments. In Case 7, no pure culture was obtained.

A piece of tissue obtained from the lesion in Case 6 showed the stratum malpighii hypertrophied, sending out finger-like projections into the corium, much as in epithelioma. Polymorphonuclear leukocytes were scattered within and between the epithelium. In some places they accumulated, and, with the addition of frag-

14. Bevan, A. D.: Treatment of Actinomycosis and Blastomycosis with Copper Salts, J. A. M. A. **45**: 1492 (Nov. 11) 1905.

ments of nuclei, detached epithelial cells and giant cells, they formed abscesses. The corium was also the seat of inflammatory changes.

Patient 6 was a farmer; he lived in very unhygienic conditions; on visiting his place I found moldy boards piled up in an old shack in the back yard where he was doing odds and ends. No history of injury could be elicited from him. Patient 7 was employed in a laundry sorting soiled clothes; while working, he caught his index finger between two barrels, bruising the finger and tearing off part of the nail. Patient 8 was injured with an old plow while working in the field.

It would appear logical to assume, as Stober [15] suggested, that the origin of the disease is from natural molds, since the latter are easily grown on moist paper, cotton, boards, etc. Injury seems to offer a place of least resistance or offers an opportunity for direct inoculation. It is interesting to note that blastomycetes are very resistant, and may persist in healed lesions and resume activity either on discontinuation of treatment or when the patient's resistance is lowered.

In our last two cases, after the lesion healed treatment was discontinued; six weeks later the lesion at the elbow recurred in Case 7. After the patient had been placed for two weeks on potassium iodid, the lesion cleared up. In Case 8, a recurrent lesion formed two months after the primary sore healed. The resistance of blastomycetes to drying was clearly demonstrated by the fact that I was able to start fresh subcultures from pure cultures four months old which were practically dry.

Since it has been shown that fungi produce antibodies,[16] skin tests with suspension of blastomycetes have been suggested by Stober,[17] and complement fixation tests using suspensions of organisms as an antigen have been suggested by me. I must admit, however, that these tests are rather unnecessary in the skin cases, since, in the latter, blastomycetes can be successfully demonstrated. In internal blastomycosis, in which the lesions are inaccessible, the serologic tests might prove of distinct aid in the diagnosis of the condition.

ACTINOMYCOSIS

Actinomycosis is rather a rare disease, yet it has been recognized for years. Bollinger,[18] in 1877, gave the first accurate description of the disease in cattle; one year later, Israel [19] gave the clinical description of actinomycosis in man. It remained for Ponfick [20] to demonstrate the identity of bovine and human actinomycosis; since that time much has been written on the subject, and cases of actinomycosis occurring practically in every organ and tissue of the body have been reported.

The parts of the body affected, in order of their frequency, are the head and neck, infection taking place through the mouth and pharynx; the chest, through the respiratory tract, and the abdominal viscera, through the alimentary tract.

The cases under my observation belonged to the first group. In two of them the infection could be definitely traced to a primary sore on the inside of the mouth; in the third case no history of injury or any primary sore inside the buccal cavity could be demonstrated. Although it has been asserted [21] that actinomycotic infection arises from within the individual and probably from carious teeth or infected tonsils, I failed to find any organisms resembling true *Actinomyces* in material obtained from the tonsillar crypts of my patients, or from their carious teeth found at the time they were under observation. If the former statement were true, it can be readily seen that actinomycosis would occur more frequently.

It is true that one may often find mycelial filaments in the cheesy particles obtained from tonsillar crypts, yet on further identification one is soon convinced that they belong to the nonpathogenic aerobic genus of *Nocardia*, and not to the true anaerobic "ray fungus" of the bovine type. Since the alveolar margin near a carious or erupting tooth presents a vulnerable place, the former constitutes a predisposing factor in this sense only.

The exact method of infection has not as yet been clearly proved, yet it would seem that the theory of the infection being conveyed to man largely from a vegetable source, such as barley beards, the hard portion of grain, or grasses is still the logical one.

Two of my patients gave a history of being in the habit of using straw as a toothpick, and the third patient, being a mail carrier, had to go through weeds that touched his face in his daily route, infection being carried into the tissues by the vegetable matter.

It is interesting to note that there is no positive evidence of infection of human beings from eating meat or consuming milk or milk products from infected cattle.

The clinical and pathologic aspects of the disease can be illustrated by the following cases:

CASE 9.—J. A., a farmer, aged 58, patient of Dr. Shearer, had been perfectly well until the latter part of June, 1922, when he received an injury to his jaw; it resulted in a fracture of the lower maxillary bone; usual surgical treatment was instituted; in the course of from seven weeks to two months, the fracture healed. The patient stated that there was no case of lumpy jaw in his cattle at this time; however, he admitted being in the habit of using a straw as a toothpick. About the latter part of November, 1922, he noticed a small boil on the right side of the upper part of the neck about half an inch from the midline; this sore enlarged and became the size of a "cherry pit." At the same time he noticed a lump the size of a marble in the right submaxillary region; it was not painful or tender to the touch. The skin over the lesion was not inflamed. The smaller sized lesion was painful; it opened spontaneously, and a bloody discharge exuded from it. The lump under the jaw continued to enlarge until it reached the present size.

When the patient presented himself he was healthy, with no subjective symptoms, and with negative constitutional findings except for the right side of his neck. On this side there was a swelling the size of a walnut. The swelling was of rather hard consistency, and slightly tender. The skin was purplish. At the center of the mass there was a small discharging sinus. Pressing on the lesion caused a thick material, containing white granules, to exude; the finding of these so-called "sulphur bodies" in the pus is characteristic. Organized tissue substance like epithelial pearls in an infected carcinoma might be mistaken for them.

Some of these bodies were crushed on a slide with a cover slip after addition of 10 per cent. potassium hydroxid solution. The examination of the slide with the high power revealed a central pale area, radiating from which were clublike formations presenting a daisy-like appearance. The crushed granule,

15. Stober, A. M.: Arch. Int. Med., April, 1914.
16. Kolmer, J. A., and Strickler, Albert: Complement Fixation in Parasitic Skin Diseases, J. A. M. A. **64**: 800 (March 6) 1915.
17. Stober, A. M.: Systemic Blastomycosis, Arch. Int. Med. **13**: 509 (April) 1914.
18. Bollinger: Centralbl. f. med. Wisschensch. **34**: 789, 1877.
19. Israel: Arch. f. Path. Anat. & Phys. **74**, 1878.
20. Ponfick, Emil: Die Actinomycosis, Berlin, 1882.
21. Lord, F. T.: The Etiology of Actinomycosis, J. A. M. A. **55**: 1161 (Oct. 8) 1910.

stained by the Gram method, showed many filaments of varying lengths irregularly arranged.

Stab cultures were made in glucose agar. At about 2 cm. from the surface of the tube, colonies appeared; they were spherical and whitish; after four days, radiating filaments appeared from the central colonies. Stained smears from the culture showed long and short filaments. No club formation was noticed.

It is interesting to note that agglutination tests made with cultures of *Actinomyces* failed to give positive results even in as low a dilution as 1:20. The patient was placed on heavy doses of potassium iodid, and simultaneously the roentgen ray was applied locally. He completely recovered at the end of two months.

CASE 10.—B., a mail carrier, aged 25, patient of Dr. Hyde, had always enjoyed good health until about three months before, when he noticed a swelling of the right side of his face, the swelling being about one-half inch from the inner border of the right ear and just below it. He stated that he remembered having his face scratched by tall weeds, about two weeks previously, in passing through them on his daily route. The swelling began to enlarge and caused him considerable pain. When I saw him, about seven weeks after the initial symptoms, he appeared to be healthy constitutionally; there was no fever and there was no abnormal physical findings except for the swelling, which after a while extended to the right submaxillary triangle; the skin over the swelling was reddened and of rather firm consistency. There were two openings just below the ear, from which serosanguineous material escaped.

Stained smears of the discharge showed many branching filaments. After making a wide opening, I succeeded in obtaining a few granules that gave the picture described in Case 9. Cultures were unsuccessful on account of the presence of contaminating bacteria. Immunologic reactions were not carried out. Bits of tissue were obtained from the sinus and run through by the paraffin method. Mallory's modified Gram and hematoxylin-eosin methods of staining were used. The tissue showed areas of necrosis, in the center of which were seen ray fungi. At the periphery of the areas were many round cells, among which epithelioid cells predominated. The swelling was incised and irrigated with surgical solution of chlorinated soda (Dakin's solution) as suggested by Baskin.[22] The irrigation was continued for a month. Locally, the roentgen ray was used.

The patient had made a complete recovery at the end of six weeks.

Case 11 illuminates the point that the so-called sulphur granules, which really more closely resemble fish eggs, and are not always yellowish, so characteristic of the disease, are not always present in the pus; the findings of the mycelia in the pus and the tendency of the condition to advance through all tissues, with the formation of fistulous tracts, should attract one's attention as to the existence of actinomycosis.

CONCLUSIONS

1. Fungous diseases occur more commonly than assumed; they are frequently overlooked.
2. Lesions of nodular character that fail to yield to ordinary surgical treatment should be investigated bacteriologically for the presence of fungi.
3. Of the three diseases described, sporotrichosis is by far the most frequent.
4. In my experience, surgical intervention, especially curettage, has aggravated the lesions, while they readily yield to potassium iodid internally, compound solution of iodin, and copper sulphate solution, as well as the roentgen ray locally.

517 City National Bank Building.

22. Baskin, M. J.: Primary Actinomycosis of the Skin, J. A. M. A. 78: 1367 (May 6) 1922.

ACTINOMYCOSIS OF THE ABDOMINAL WALL *

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Reports of cases of actinomycosis of the abdominal wall are so rare, and the features are so significant, that the recording of two new cases and a brief discussion of the subject seems to us to be worth while.

Actinomycosis of the abdominal wall is probably always secondary to the involvement of the gastrointestinal tract, chiefly in the region of the appendix or cecum. Nevertheless, there are cases in which the first symptoms, at least those of a focal or localizing type, are referred to the abdominal wall rather than to some organ within that cavity. In other cases, the involvement of the wall is so extensive, as compared to that within the cavity, as entirely to overshadow the latter.

REPORTS OF CASES

CASE 1 (by J. W. H.).—K. S., a girl, aged 11, had initial symptoms of acute appendicitis. Jan. 29, 1917, the third day of illness, a perforated, gangrenous adherent appendix was removed and free drainage established in the usual manner. The wound refused to heal properly. It would close for a few days at a time, and then again open up and discharge pus. Five months after the first operation, a second one was performed, the incision being made in the median line. At this time, a large amount of necrotic tissue and pockets of pus, producing a somewhat honeycombed condition of the abdominal wall, were found. After a short period of improvement, fever again appeared, and the left thigh became flexed. Three months after the second operation, another median line incision was made, and a well defined psoas abscess on the left side was opened up. This abscess communicated by means of a sinus with the old drainage area. Examination of the pus (by H. A.) revealed the presence of *Actinomyces bovis*. The appendix, which had been removed eight months previously, was then examined, and the ray fungus also found there. The primary focus of the actinomycotic infection was probably in that organ. During the following eight months, the patient was treated at the University Hospital in Iowa City. During this time, the patient received large doses of potassium iodid, a number of abscesses involving practically all portions of the abdominal wall were opened, and the wounds were irrigated with solutions of copper sulphate. Roentgen rays were also used. The condition of the patient slowly but gradually became worse. She died Sept. 19, 1917—one year, seven months and twenty-one days after the appearance of the first symptoms. No necropsy was performed.

CASE 2 (by J. B. H.).—E. E. S., a man, aged 36, a truck driver, July 10, 1922, came to the office complaining of a severe pain in his abdomen. He had worked all day. He had not felt well for several months, but had not missed a day's work. Five days previously, he had sustained a sharp blow on the abdomen from the crank of an automobile. Since then, he experienced continuous and increasing pain.

The temperature was 101.4, the pulse 118. The skin was cold and clammy, and there was every appearance of intense infection. The entire lower right side of the abdomen was hard, tender and resistant. About 3 inches below the umbilicus, a fluctuating mass 2 inches (5 cm.) in diameter was found.

The patient was taken to a hospital and prepared for an immediate operation. When the abdominal wall was opened at McBurney's point, a profuse flow of pus was encountered at the depth of the sheath of the rectus. Pressure on the fluctuating mass below the umbilicus accelerated the flow of pus

* Read before the Section on Pathology and Physiology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

from the original incision. With a blunt probe, a sort of sinus posterior to the right rectus, connecting the original incision with the lesion in the median line, was followed.

The median line lesion was then opened, and thorough drainage between the two incisions was established. The pus evacuated at that time was not measured, but it was estimated to be 28 ounces (828 c.c.).

From both incisions, the drainage continued to be profuse. The dressings were changed at least twice a day during the entire course of the disease.

July 18, a swelling appeared over the right Poupart's ligament. When it was opened, about 12 ounces (355 c.c.) of thick pus was encountered.

From July 18 until the time of death, no new openings were made, but occasional probings into the honeycombed area of sinuses in the right lower quadrant seemed to increase the flow of pus.

Leukocyte counts were made every few days during the entire course of the disease. The total white count varied between 17,000 and 22,000. Several cultures were made. A pure culture of staphylococcus was obtained July 24. A specimen of pus examined by one of us (H. A.), August 9, showed *Actinomyces*.

The temperature curve between the date of admission and August 21, three days before death, was normal in the morning and from 101.4 to 104.6 in the evening. After August 21, the temperature was continuously subnormal until death.

The pulse varied between 110 and 140; it was of fair quality, and the heart sounds remained normal.

Frequent examinations of the urine were made during the course of the disease. Slight traces of albumin were always present.

The patient's appetite remained fair. No intra-abdominal symptoms appeared. There was no general peritonitis, and no severe pain was ever complained of. The liver was somewhat enlarged. Increase or decrease of drainage seemed to exhibit no influence on pulse or temperature. The terminal stage was an extreme overwhelming sepsis. Death occurred, August 24, one month and nineteen days after the appearance of the first symptoms.

NECROPSY (BY H. A.)

The body was markedly emaciated, with very little subcutaneous fat. Three abdominal skin wounds with gauze drainage discharged a slight amount of pus of a distinctly fecal odor. The omentum was practically free from fat and markedly adherent to the pelvis, and on the right side. The peritoneum, where not adherent, was smooth and shiny, except in the pelvic cavity, where it was covered with flakes of fibrin.

The abdominal wall contained a number of tortuous channels from 0.5 to 1 cm. in diameter. These were intercommunicating, making, in some places, a network so thick as to produce a honeycombed appearance. These occasionally expanded into small abscesses. The channels and abscesses contained a thick, creamy pus in which, when spread out in a thin layer, small yellowish bodies (ray fungus) were visible. The lining wall of the channels was pink. The sinus-like channels were found in the connective tissue, chiefly subperitoneal, but also intermuscular and subcutaneous. The breaking up of adhesions between the omentum and the abdominal wall and intestines and between the several coils of adherent intestines in the right iliac region exposed quite a number of tortuous sinuses containing pus.

Posterior to the ascending colon, and extending up to the liver, was a large abscess well walled off. The appendix was short, thick, light colored and firmly adherent, extending posteriorly and upward. It was nodular, and contained a small perforated opening near the cecum. The outer lining of the cecum and ascending colon was rough, and in places slightly necrotic, as a result of the extension of the process from without inward. The mucosa was normal except for a small ulcer in the cecum adjacent to the opening of the appendix. *Actinomyces* was found in the wall in such places.

The liver was enlarged, its lower border extending 8 cm. below the border of the ribs, and to within 2 cm. of the umbilicus, and 2 cm. below the crest of the ileum. The lower third of the right lobe of the liver was soft. Section disclosed this portion to be made up of small intercommunicating abscesses with only a delicate remnant of liver tissue between them. The portion of the liver involved by the purulent process measured 13 by 12 by 8 cm.

The posterior portions of both lungs were firm in consistency, almost air free, dark red, and containing a number of light colored subpleural nodules measuring from 1 to 5 mm. in diameter. Other portions of the lungs were normal.

The pleurae were smooth and free from adhesions. The right cavity contained 90 c.c., and the left, 100 c.c. of clear, light, straw-colored fluid.

The diaphragm was normal and free from adhesions on both sides. The kidneys were cloudy and swollen. The other organs were normal.

Actinomyces was found in the pus from the sinuses of the abdominal wall, in the cecum, in the abscesses of the liver and in the miliary nodules of the lungs. Staphylococci were also found at all of these sites. Colon bacilli were found in the abdominal wall sinuses.

COMMENT

The literature contains reports of but few cases of actinomycosis involving the abdominal wall. One case each has been reported by Lange [1] Ruhräh,[2] Van Der Veer and Elting,[3] Harris,[4] Keefe,[5] Chipman,[6] Bevan,[7] Choyce,[8] Israel,[9] Cope,[10] Ramstad [11] and McCalla.[12] Seven cases of abdominal wall involvement were included in the recent report by Brogden [13] of fourteen cases of actinomycosis of the gastro-intestinal tract.

The large amount of loose connective tissue—subperitoneal, intermuscular and subcutaneous—appears to serve as a predisposing factor in the more extensive involvement of this tissue and portion of the body than occurs at the primary sites of infection, such as the intestine or the jaw.

The part of the abdominal wall usually involved first is the right lower quadrant overlying the appendicealcecal region. Exceptions are the development of abscesses in the prevesical region,[4] vaginal region [12] and umbilical and vaginal regions.[1]

Multiple sinus openings occurred in both of our cases, as well as in most of the other reported cases.

The initial symptoms may be of an acute nature. In some cases, they correspond to an acute appendicitis (Case 1). Cases in which the involvement of the abdominal wall has been preceded, for from two weeks to four years, by symptoms of general abdominal distress or pain have been reported by Ramstad [11] (two weeks), Cope [10] (two months); Van Der Veer and Elting [3] (three months), and Brogden [13] (four years).

Abscess formation in the abdominal wall without previous symptoms especially referable to the abdominal cavity occurred in the second of our cases, and also in the case reported by Chipman.[6]

Traumatism appears to have played a part in initiating the development of the first symptoms in the second of our cases, and in the case reported by Bevan.[7]

1. Lange, F.: Ann. Surg. **24**: 372, 1896.
2. Ruhräh, J.: Actinomycosis in Man, with Special Reference to the Cases Which Have Been Observed in America, Ann. Surg. **30**: 417 (Oct.-Dec.) 1899.
3. Van Der Veer, A., and Elting, A. W.: A Résumé of the Subject of Actinomycosis, with Report of a Case of Actinomycosis Abdominalis, M. Rec. **30**: 109, 1902.
4. Harris, M. L.: Ann. Surg. **37**: 466, 1903.
5. Keefe, J. W.: Intestinal Actinomycosis, Am. J. Obst. **79**: 13-18 (Jan.) 1919.
6. Chipman, W. W.: The Clinical Aspect of Actinomycosis, Montreal M. J. **34**: 93-98, 1905.
7. Bevan, A. D.: Actinomycosis, Ann. Surg. **51**: 641, 1905.
8. Choyce, C. C.: Actinomycosis of the Abdominal Wall, Proc. Roy. Soc. Med. **4**: 79-82, 1910-1911.
9. Israel, J.: Seltener Fall von Aktinomykose, Deutsch. med. Wchnschr. **39**: 2378, 1913.
10. Cope, V. Z.: A Clinical Study of Actinomycosis, with Illustrative Cases, Brit. J. Surg. **3**: 55-81, 1915-1916.
11. Ramstad, N. O.: Actinomycosis, Journal-Lancet **36**: 732-735, 1916.
12. McCalla, A. J.: Actinomycotic Infection, with Case Reports, Canadian M. A. J. **9**: 411-420 (May) 1919.
13. Brogden, J. C.: Actinomycosis of the Gastro-Intestinal Tract: A Study of Fourteen Cases, J. Lab. & Clin. Med. **8**: 180 (Dec.) 1922.

The traumatism in each case occurred about four days previous to the development of the more acute symptoms. It probably acted by hastening the invasion of the part by secondary pyogenic micro-organisms.

SUMMARY AND CONCLUSIONS

1. Actinomycosis of the abdominal wall is a rather rare condition, although greater use of the diagnostic laboratory indicates that it is not so rare as the few cases reported in the literature would lead us to believe.

2. Although probably always secondary to involvement of the gastro-intestinal canal, chiefly the appendix and cecum, the fact that in some cases the first symptoms are referable to the abdominal wall, and that in others the wall is very extensively involved, warrants special consideration of the subject.

3. The first symptoms may be referable to the development of an abscess in the abdominal wall, or to an acute appendicitis, or they may be in the nature of indefinite abdominal symptoms of distress.

4. The abdominal wall is usually involved first in the lower right quadrant. The region overlying the appendix is the portion chiefly involved, although in some cases the abscess has made its first appearance in the region of the umbilicus, and in others, in the vagina.

5. The process extends by burrowing small channels about 1 cm. in diameter in the subcutaneous, subperitoneal and intermuscular connective tissue. In places, larger abscesses are formed, which, if not opened by incision, will perforate the skin. In either case, a sinus which discharges pus and which has little tendency to heal is formed.

6. Actinomycotic granules should be looked for whenever an abdominal sinus persists in spite of free drainage. The condition becomes very suspicious whenever an abscess secondary by extension by way of a burrowing channel develops, in spite of free drainage of the primary abscess. Still greater suspicion should be aroused if, in addition to the conditions mentioned, the liver becomes enlarged.

7. To establish a diagnosis, the pus should be diluted with water to see if light, yellowish granules are present. The gauze drains should likewise be washed. If necessary, the lining wall of the sinus should be curetted. The finding of other micro-organisms should not deter one from making a determined search for the ray fungus.

8. The treatment consists of opening up the abscesses, establishing free drainage, irrigating the abscesses and sinuses with solutions of copper sulphate, and administrating orally large doses of potassium iodid.

9. The prognosis depends largely on the establishment of an early diagnosis and the institution of the proper treatment in a vigorous manner. At best, the prognosis is unfavorable. Lange [1] and Bevan,[7] however, have reported cases which, at the time of reporting, had apparently recovered.

Infant Mortality in United States for 1922.—Infant mortality rates for 1922, on the whole, balance those of 1921, only ten of twenty-five states showing higher rates in 1922 than in 1921. The highest 1922 infant mortality rate (105) appears for the cities of South Carolina, and the lowest (55) for the rural district of Nebraska. Infant mortality rates shown for both years for fifty-one cities of 100,000 population or more in 1920 are in nineteen of these cities lower in 1922 than in 1921, the highest rate (107) appearing for Trenton and the lowest (50) for Seattle.—*Public Health Rep.* **38**:1638 (July 20) 1923.

DISTRIBUTION OF ACTINOMYCOSIS IN THE UNITED STATES *

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The last compilation of cases of actinomycosis in America was published by Erving [1] in 1902, who reported 100 cases, including the cases in Ruhräh's [2] very complete study, made in 1899. In 1921 I presented, with Magath,[3] before the Minnesota State Medical Association, a review of 119 collected cases in the United States and ninety-six cases that had been observed in the Mayo Clinic. This number did not seem to us to represent all the cases of actinomycosis that had been recognized in this country. We believed, also, that the paucity of reports in the literature had kept alive the idea that actinomycosis is a rare condition. I decided, therefore, to collect from as many sources as possible, reports of all types of the disease in this country.

Formerly we followed the suggestion of J. Homer Wright [4] and other writers as regards nomenclature, calling *Actinomyces* only an organism of the type *Actinomyces bovis* forming typical "sulphur granules" with club-shaped rays, not acid-fast, and growing with difficulty in cultures, usually anaerobic. Our previous report was made only on patients that were definitely infected with organisms of this type, the term "nocardiosis" being applied to the disease in which the infection was caused by so-called nocardia or streptothrix or any of the actinomycetes that grow aerobically and are acid-fast. However, the Committee on Nomenclature [5] of the American Society of Bacteriologists, in its final report, has recommended that all organisms of this type be now classified under the generic name *Actinomyces*.

There have been many interesting controversies regarding the classification of these organisms, and little progress has been made in straightening out the tangles that have arisen through mistakes in description of individual strains and from false nomenclature. It seems best to follow the recommendation of the Committee on Nomenclature, and to classify as belonging to the genus *Actinomyces* those organisms growing with much branching mycelia which may break up into segments that function as conidia, sometimes parasitic, with clubbed ends and radiating threads in the lesions of the animal body. The organism is nonmotile, and certain species are micro-aerophilic or anaerobic. It must also be said that some of the actinomycetes are acid-fast, while others are not acid-fast. When an organism that can be classified in this genus is found in the tissues or discharges, the disease must be called actinomycosis.

With this criterion, then, the literature in the United States has been searched as thoroughly as possible. Many titles in no way suggest that the disease is actinomycosis, and sometimes none of the obsolete

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* From the Section on Clinical Pathology, Mayo Clinic.

* Read before the Section on Pathology and Physiology at the Seventy-Fourth Annual Session of the American Medical Association, San Francisco, June, 1923.

1. Erving, W. G.: Actinomycosis Hominis in America, with Report of Six Cases, Bull. Johns Hopkins Hosp. **13**: 261-268, 1902.
2. Ruhräh, John: Actinomycosis in Man, with Special Reference to the Cases Which Have Been Observed in America, Ann. Surg. **30**: 477-451, 605-631, 722-746, 1899.
3. Sanford, A. H., and Magath, T. B.: The Etiology and Laboratory Diagnosis of Actinomycosis, Minn. Med. **5**: 71-79 (Feb.) 1922.
4. Wright, J. H.: The Biology of the Micro-Organism of Actinomycosis, J. M. Res. **13**: 349-404, 1904.
5. Committee Report: The Families and Genera of the Bacteria, J. Bacteriol. **5**: 191-229, 1920.

synonyms, streptothrix, cladothrix, oospora, discomyces, actinocladothrix, that have been used at various times for this organism appear. Probably there are still buried in the literature cases of actinomycosis that may not have been diagnosed as such, but which could be so classified from the description of the unusual organism that had been found. We have been able to find 209 cases of actinomycosis that have been reported heretofore in American literature.

TABLE 1.—*Actinomycosis in the United States*

Region and State	Published Cases	Unpublished: Personal Letters	Unpublished: Health Officer	Unpublished: Hospitals	Total	Total for Regions	Veterinarian's Statistics
New England:							
Maine	..	2	4	..	6	..	Fraction of 1 per cent. in cattle
New Hampshire	..	..	..	..	..	..	Occurs, but not prevalent
Vermont	..	..	..	1	1	..	One case in twenty years
Massachusetts	21	2	48*	..	71	..	Forty-six cases in five years
Rhode Island	1	..	..	1	2	..	
Connecticut	..	1	3	2	6	..	
Totals	22	5	55	4	86	86	
No. Atlantic Coast:							
New York	40	7	..	17	64	..	Forty-four cases in 1921, on western border
Pennsylvania	13	1	5	2	21	..	
New Jersey	3	1	..	..	4	..	
Delaware	..	..	..	1	1	..	
Maryland	12	..	..	35†	..	..	
Dist. Columbia	1	..	..	..	1	..	
Totals	69	9	5	55	138	138	
So. Atlantic Coast:							
Virginia	3	..	..	7	10	..	
No. Carolina	3	..	..	..	3	..	
So. Carolina	..	1	..	..	1	..	
Georgia	..	1	..	..	1	..	Only in feeder cattle shipped in from Texas
Florida	..	1	..	..	1	..	Forty cattle in 87,151 cattle examined
Totals	6	3	..	7	16	16	

* No data on thirteen of these.
† Data to be published from Johns Hopkins Hospital.

An attempt was made to collect, from representative sources in all parts of the United States, reports of unpublished cases of actinomycosis. Letters were sent to the health officers in every state in the Union, and many interesting replies were received, indicating the great difference in the various portions of the country as regards the reportability of the disease. In this manner, eighty-seven unpublished case reports were obtained. Likewise, letters were sent to the larger hospitals and to all of the existing medical schools in the country, with the result that 148 additional case reports were obtained. A letter requesting information on the subject of actinomycosis was published in THE JOURNAL, in the various state medical journals, and in many dental journals. The response from these requests for information was most gratifying, ninety-nine cases being reported. A total of 334 unpublished cases was collected. There has been an increasing number of cases of actinomycosis at the Mayo Clinic during the last fourteen years. Up to the present there have been 160 diagnosed. Twenty-five of these, however, are from Canada and are not included in this statistical study. New,[6] of the clinic, is making a report at this time on 107 cases of actinomycosis of the head and neck that he has seen. New and Figi[7] have reported cases of actinomycosis of the tongue observed by them. Brogden,[8] of the clinic, reported fourteen cases of abdominal actinomycosis. Since then there have been eight cases, making a total of twenty-two cases of actinomycosis of the abdominal type seen at the Mayo Clinic. Moersch[9] has reviewed cases of actinomycosis of the central nervous system and reported three. In recent years there has practically never been a time that a case of actinomycosis in some form could not be seen at the clinic.

Data were obtained concerning nearly 700 cases in the United States, and it is probable that there are many more than this. Complete protocols of the reports of these cases, obtained from various sources, have been arranged geographically and will be published elsewhere as a geographic index of the disease. A brief summary of the data thus obtained may be of interest from the standpoint of the distribution of actinomycosis in the United States. For convenience, the states have been grouped in the usual geographic manner; the distribution of actinomycosis in these regions is as follows:

In the six New England states (Table 1) there were eighty-six cases; special attention is directed to the state of Massachusetts. The count given is for the total number of cases in the health officers' reports, but the data are complete in only thirty-five. The disease has been reportable in Massachusetts since

TABLE 2.—*Actinomycosis in the United States*

Region and State	Published Cases	Unpublished: Personal Letters	Unpublished: Health Officer	Unpublished: Hospitals	Mayo Clinic	Total	Total for Regions	Veterinarian's Statistics
East Central:								
Michigan	7	1	3	8	2	21	..	No data; very little among cattle
Ohio	9	..	..	4	4	17	..	Not rare, only sporadic
West Virginia	1	1	..	..	..	2	..	
Indiana	1	2	1	..	7	11	..	
Kentucky	1	..	..	..	..	1	..	
Totals	19	4	4	12	13	52	52	
Mississippi Valley:								
Illinois	34	..	1	10	5	50	..	
Wisconsin	10	16	4	2	8	40	..	
Minnesota	4	10	8	1	24	47	..	
Iowa	9	11	..	..	17	37	..	
Missouri	2	3	..	5	7	17	..	
Totals	59	40	13	18	61	191	191	
Northwest Central:								
Kansas	4	10	2	1	1	18	..	
Nebraska	2	4	..	..	4	10	..	30% of herds; 2% of total cattle probably infected
North Dakota	6	1	1	22	13	43	..	
South Dakota	..	2	..	..	22	24	..	
Totals	12	17	3	23	40	95	95	
Southern:								
Tennessee	1	1	..	3	..	5	..	Very prevalent; 80 cattle in herd of 100
Arkansas	1	1	..	..	..	2	..	Probably fraction of 1%
Alabama	1	..	..	2	..	3	..	None
Mississippi	..	..	..	3	..	3	..	
Oklahoma	3	4	..	4	1	12	..	
Louisiana	..	..	..	2	..	2	..	
Texas	2	..	3	2	1	8	..	
Totals	8	6	3	10	2	35	35	

6. New, G. B.: Actinomycosis of the Head and Neck: Report of One Hundred and Seven Cases, to be published.

7. New, G. B., and Figi, F. A.: Actinomycosis of the Tongue, Am. J. M. Sc. **143**: 507-517 (April) 1922.

8. Brogden, J. C.: Actinomycosis of the Intestinal Tract: A Study of Fourteen Cases, J. Lab. & Clin. Med. **8**: 180-189 (Dec.) 1922.

9. Moersch, F. P.: Actinomycosis of the Central Nervous System, Arch. Neurol. & Psychiat. **7**: 745-752 (June) 1922.

1907. The well-known studies of Wright,[4] in the Massachusetts General Hospital, and the interest in the disease in Massachusetts undoubtedly account for the accurate diagnoses in this state.

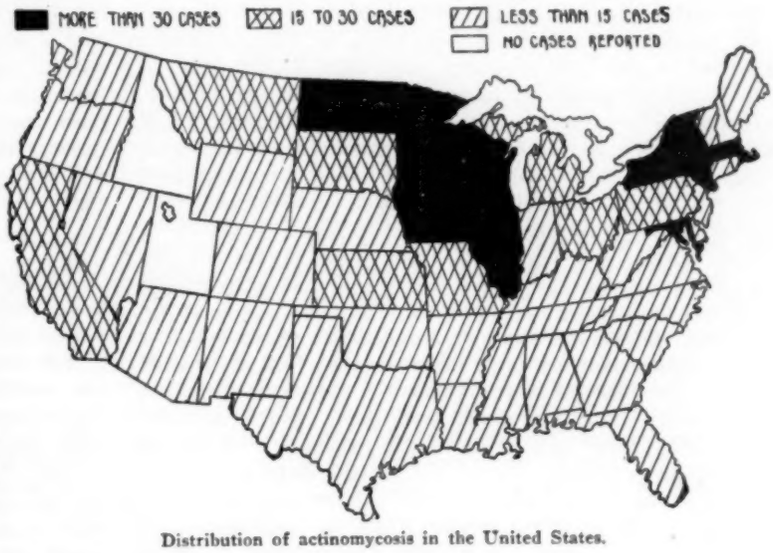
In the North Atlantic coast states there have been 103 cases reported, including one case from the District of Columbia. The states of New York, Pennsylvania and Maryland have furnished a large amount of material. Here, again, it should be observed that accurate diagnoses in the large medical centers may be largely responsible for the apparent increase in the number of cases in the states mentioned in this region. Also, the population in these states is very large. The South Atlantic coast states furnished only sixteen cases.

The Central states, for convenience, are divided into the East Central, the states of the Mississippi Valley, and the Northwest Central states. In the five states composing the east portion of the Central states there were fifty-two cases. In the Mississippi Valley portion, composed of Illinois, Wisconsin, Minnesota, Iowa and Missouri, there were 191 cases. In the northwest portion of the Central states there were ninety-five cases reported. One hundred and one of the 161 Mayo Clinic patients are resident in these two portions of the Central states. The seven Southern states—Tennessee, Arkansas, Alabama, Mississippi, Oklahoma, Louisiana and Texas—report thirty-five cases; the Plateau states furnished data for thirty-seven. The three states of the Pacific coast have reported twenty-eight cases (Tables 2 and 3).

TABLE 3.—*Actinomycosis in the United States*

Region and State	Published Cases	Unpublished: Personal Letters	Unpublished: Health Officer	Unpublished: Hospitals	Mayo Clinic	Total	Total for Regions	Veterinarian's Statistics
Plateau States:								
Montana	?	6	3	..	13	22	..	Very interesting letter; 0.25% infected
Idaho	..	..	..	..	..	..	..	
Wyoming	..	1	..	1	1	3	..	
Nevada	..	2	..	..	..	2	..	
Utah	..	..	..	..	..	..	..	Widely distributed; more prevalent in lowlands
Colorado	1	3	..	2	1	7	..	
Arizona	1	..	..	..	1	2	..	
New Mexico	..	..	1	..	..	1	..	Very rare; probably not more than one in 10,000
Totals	2	12	4	3	16	37	37	
Pacific Coast:								
California	9	2	..	7	..	18	..	Not uncommon in Sacramento and San Joaquin valleys
Oregon	..	1	..	..	1	2	..	
Washington	3	..	..	3	2	8	..	Not prevalent; mostly on range east side of mountains
Totals	12	3	..	10	3	28	28	
Total for United States							678	

It is evident that the Central states have furnished the greatest number of cases. However, considering the individual states, Massachusetts leads. New York state, with its large population and its numerous medical centers, comes next. Illinois, with fifty cases, is third. It should be recalled that the first case of actinomycosis in the United States was reported from Illinois by Murphy. While the disease has been of interest in Chicago ever since, the number of cases reported probably does not represent the number of cases that have been seen in the various hospitals and clinics of that state. Minnesota has the next largest number of cases, forty-seven having been reported from this state. Twenty-four of these were seen in the Mayo Clinic. The order in the other states is: Wisconsin, forty; Iowa, thirty-seven: South Dakota, twenty-four; Montana, twenty-two; Michigan, twenty-one; California, eighteen; Ohio, seventeen; Oklahoma, twelve; all other states have reported a lesser number. The only states that have not reported at least one case are New Hampshire, Idaho and Utah. It seems probable that the disease exists in the last two states at least.



Distribution of actinomycosis in the United States.

An important factor in the consideration of the distribution of actinomycosis is the population of the various states. Sixty-four cases in nearly forty years in New York state, which has a population of ten million, is, after all, proportionately only about a tenth the number that forty-three cases represent in North Dakota, where the population is only 650,000. With this in mind, it is even more apparent that the disease is much more often diagnosed in patients living in the Central and Plateau states. The only exceptions are Massachusetts and Maryland, where interest in the disease has been paramount in the large medical centers.

In order further to study the distribution of actinomycosis in this country, the veterinarian of each state was asked for information concerning this disease in cattle. The general impression in the New England states is that "lumpy-jaw" is not common in cattle. The state of Vermont has had one case in the last twenty years. The state of Massachusetts has had only forty-six cases in the last five years. The State Department of Farms and Markets of New York reports that in the year ending June 30, 1921, there were forty-four cases reported in that state, principally in the western part next the Pennsylvania line. The disease, however, seems not to be as prevalent as in years past. It would seem then that in the North Atlantic states the disease among cattle is very well controlled. In the South Atlantic states, actinomycosis in man and beast seems to be a rare disease. In Florida

the state veterinarian reports that only forty of 87,151 cattle examined had the disease, about four for each 10,000. In Georgia it is claimed that the disease is not found except in feeder cattle shipped from Texas. The eastern portion of the Central states does not seem to be troubled. The statistics from the state veterinarians in the Mississippi Valley states furnished little information regarding the distribution of the disease. The state veterinarian of Nebraska, of the northwest portion of the Central states, says that 30 per cent. of the herds, or probably 2 per cent. of the total cattle, are probably infected. In the Southern states, while actinomycosis is not common in man, there is a considerable difference of opinion as to the prevalence of the disease among cattle. In Alabama it is said that there is no actinomycosis; in Arkansas, probably a fraction of 1 per cent.; in Texas it is prevalent, and in Tennessee it is most prevalent. The state veterinarian of Tennessee has seen as many as eighty cattle infected with actinomycosis in a herd of 100. The state veterinarian of New Mexico says that it is very rare in the Plateau states, probably not more than one in 10,000. In Utah, actinomycosis is widely distributed, being more prevalent in the lowlands and where the forage is rough. Since the introduction of downy brome grass, or *Bromus tectorum*, there has been more infection. In sections where straw is consumed and where bearded grain is grown, the disease is quite prevalent.[10]

One of the most interesting letters received was from W. T. Butler of Helena, Mont., state veterinarian, who believes that the condition exists in practically every section of Montana. He says:

> I have seen it in dairy cattle as well as in range cattle, only we find a much greater percentage of range cattle affected, and in certain districts we find it much more prevalent than in other districts.
>
> Years ago when I spent most of my time on the range, this condition was very prevalent in the Musselshell country, and also on the Crow Indian Reservation, and apparently more so in the cattle that ranged around the Big Horn River. I can remember very clearly that, when an outfit shipped out of Custer, the Indians always followed the wagon, knowing that most of the "lumpy jaws" would be cut out and given to them. They ate these particular animals with apparent relish.
>
> I was talking to an old range man the other day, and the question of lumpy jaw came up. It was his observation, and it has been my observation, that this disease is less prevalent today than in the past; but why it is less prevalent we are unable to determine, unless it is due to the fact that cattle are pastured and fed hay more than in the past. . . .
>
> On a rough guess, I would say that probably less than 0.25 of 1 per cent. of our cattle are affected with actinomycosis.

It would not be practicable in this paper to give a complete review of the clinical data concerning these cases. Briefly, in these 678 cases it was found that the disease is either acute or chronic and located in every part of the body mentioned in the classical work of Poncet and Bérard,[11] except the esophagus and lacrimal ducts, and in many rare locations that these authors do not mention. The most common locations, in the order of incidence, are the head and neck, the abdomen and the thorax. The extremities, pelvic organs, genitalia, central nervous system and, in fact, any portion of the body, may be the seat of infection. Eighty per cent. of the cases occurred in males. It is a disease usually of young adult life, although the cases of one infant aged 28 days and two men aged 82 years were reported. There were twenty-two patients between the ages of 1 and 10 years and seventy-one between 10 and 20. Actinomycosis is, therefore, to be considered in childhood and youth. Occupation is not important, since only 50 per cent. of the patients were really in contact with cattle or in occupations that would predispose to the infection. If it is considered that man and beast obtain their infection from a common source, it may be surmised that any individual who is careless about chewing straws, twigs, grasses or grains, or who is neglectful in the care of his mouth and teeth, may thus be readily infected.

10. Stephensen, W. A.: Personal communication to the author.
11. Poncet, A., and Bérard, L.: Traité clinique de l'actinomycose humaine, pseudo-actinomycoses et botryomycoses, Paris, Masson & Cie, 1898.

CONCLUSIONS

Actinomycosis is distributed widely in this country, being especially prevalent in the upper Mississippi valley and the northwest portion of the country. It is far more common than one is led to believe from the scattered reports that have appeared in the American literature. This fact should make all physicians more alert in the diagnosis of the disease, which is very easily made from a microscopic examination of the discharges. The public generally might be warned of the danger of chewing straws, weeds and grain, as a possible means of infection with *Actinomyces*. Much is yet to be learned, however, with regard to the source of infection in man and animals, and also much is to be done in the proper classification and the bacteriologic investigation of the different species in this group.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. WOHL; ALBERT, HARDY AND HARRISON, AND SANFORD

DR. DAVID J. DAVIS, Chicago: I recall seeing some years ago a case of abdominal actinomycosis in a woman, aged about 19. There were abscesses in the lower part of the abdomen involving both ovaries. They were about the size of an orange. On the right side, the fallopian tube also was involved, and in it were found typical actinomycotic granules. These abscesses were removed surgically. They were intimately related to the abdominal wall. This young woman recovered or, at any rate, she was quite well a year and a half after the operation. The appendix was not involved in this case. I recall looking up the literature at that time, and I think there were recorded twenty-one cases of actinomycosis of the female genitalia. Most of them came apparently from the intestinal canal, some from the rectum, and some from the appendix. Since there was not a necropsy made in this case, it was not possible to determine the exact origin of the infection; presumably, however, it was the intestinal canal.

DR. H. E. ROBERTSON, Rochester, Minn.: There is one point about actinomycosis not only of the abdominal wall but also of other parts of the body that I think needs more attention than it has received in literature; namely, the fact that the primary lesion of actinomycosis not only is not always demonstrated, but cannot always be demonstrated. Dr. Davis mentioned that a necropsy had not been performed, and consequently the primary lesion could not be determined. It is quite possible that even if the necropsy had been performed the primary lesion could not have been determined. I have in mind a case we had at the Mayo Clinic in which actinomycosis was demonstrated in the liver. Going back in the history of the man's case, we found that he had had appendicitis; his appendix was removed, and there was a scar in the abdominal wall following this procedure. It was immediately taken for granted that the source of this actinomycosis of the liver was the appendix; but the

appendical region was absolutely clean; the appendical wound was clean; the cecum was clean; in fact, there were fewer adhesions than usually follow such a surgical procedure; there was not a sign of actinomycotic or other lesion remaining behind. I do not see any reason for selecting the appendix so uniformly as the source of origin. There is no reason why the actinomycosis organism should not go through the mucosa of the intestinal tract at any point. As a matter of fact, in the case mentioned, the duodenum was fastened extremely closely to the liver, whether as the result of the actinomycosis or as the cause of it, I could not say, but it is quite possible that it was the cause of it. Another thing we have to bear in mind is that in tuberculosis, for example, we cannot always demonstrate the primary source of entrance of the infection. It may find entrance through any mucous surface, circulate for a long time, perhaps, or rest for a long time, perhaps, and finally find a locus in which it can set up its growth activities. Hence, when we try to demonstrate the point of entrance, there may be no lesion seen and the place where actinomycosis finally locates is the place where it can grow best. The same is true of cancer, sarcoma and other diseases of that type; and we must recognize this when we are talking about primary foci of disease.

DR. GEORGE T. CALDWELL, Dallas, Texas: In a case of multiple abscesses of the liver, the typical organism of actinomycosis was demonstrated. This man, aged 75, had had upper abdominal pain for about three years. The real nature of his trouble was never suspected during life, but at the necropsy I found great numbers of abscesses in the liver, with no involvement whatever of the appendix or cecum. The appendix was perfectly free from adhesions. The gallbladder was thick walled; it was shrunken down over a few gallstones, and there were many adhesions about the duodenum. It seemed probable that the source of infection might be the gallbladder, although the distribution of the lesions throughout the liver was that which we usually consider as a hematogenous distribution.

DR. PETER BASSOE, Chicago: I have been greatly impressed by the difficulty in diagnosis, particularly in those very interesting cases in which the chief symptoms relate to the spine. For instance, at a hospital in Chicago at which are in attendance men who have reported the largest number of cases from the Middle West, there was a young man who stayed in the hospital for many months. He had symptoms leading to a diagnosis that seemed very obviously tuberculosis of the spinal cord, until it was found in a subsequent roentgen-ray examination that the heads of the ribs on both sides had become eroded; then the diagnosis was changed to malignant tumor. Vertebral abscesses were formed, but that patient went right on to necropsy before any man who saw him suspected actinomycosis. I recall also another unpublished case of actinomycosis of the spine for a while in the service of Charles A. Parker in which there was a very extensive lump on the spine, and finally examination of the signs led to the correct diagnosis of actinomycosis during life. In view of the difficulty in diagnosis, I believe that the maps and charts showing the distribution of the disease in this country are more truly maps showing the order of excellence of routine laboratory examinations in hospitals. These dark areas on Dr. Sanford's map really represent the section of the country where the most thorough work is being done. It is entirely too early for us to say anything positive about the actual frequency of these diseases, and the same is true with regard to the involvement of the different organs. The appendix, as Dr. Robertson mentioned, is an organ that receives a great deal of attention, that is in everybody's mind, and for that reason, perhaps, has been singled out for attention.

DR. HARLAN P. MILLS, Phoenix, Ariz.: A case that came to us recently would seem to indicate actinomycotic infection from contamination of an operation wound of the abdominal wall. The tissues taken at the abdominal operation were not sent in for examination. The wound failed to heal entirely, leaving a discharging ulcerated surface. This area was excised and the wound healed in part, but a portion of the line of excision remained open, discharging, with an ulcerated surface involving not the entire distance through to the peritoneal cavity, but into the muscle structure. Finally, after a number of weeks, this was removed by wide excision, and the tissue sent to our laboratory for examination. The ray fungus was found. The wound following this excision healed apparently completely for a time; then small nodules and areas of ulceration appeared along the line of the incision. These were immediately treated by radiotherapy, and have remained healed for the past three or four months.

DR. ROY W. HAMMACK, Los Angeles: I have recently studied two cases of actinomycosis in the abdominal wall which are interesting from the standpoint of the source of the infection. One patient was a physician. His case has been reported in the *California State Journal of Medicine* by Kinkenberger. The other patient was an elderly lawyer. In the case of the physician, the affected area was low on the lateral abdominal wall; in fact, pointing below the crest of the ilium. There were no abdominal symptoms. An operation and cleaning out of the affected area was followed by recovery. This doctor recalled that he had treated a case of possible actinomycosis of the jaw, and he thought that he might have infected the skin by scratching himself. He had hives at that time. The lawyer had two pointing abscesses, one on the anterior abdominal wall and one on the posterolateral wall. At the necropsy, an extensive tuberculosis of the lungs was found, and ulceration in the sigmoid, which was adherent to the abdominal wall. A retroperitoneal abscess extended from this point through the retroperitoneal tissues, pointing at the two places I mentioned. The appendix was normal. The infection evidently was through the large intestine.

DR. MICHAEL G. WOHL, Omaha: One practical point to be emphasized is this: The primary source of actinomycosis is not well established. It is still a mooted question as to whether it is of animal or vegetable origin; however, it has been stated that a large percentage of these cases occur in rural communities, particularly in people who are in the habit of picking their teeth with straw or who chew grasses. Propaganda against the use of straw as a toothpick, etc., particularly in those communities where actinomycosis has been found to be prevalent, would materially lessen the incidence of this disease.

DR. HENRY ALBERT, Reno, Nev.: With reference to the distribution of actinomycosis in cattle, I wonder whether Dr. Sanford has secured data from the Bureau of Animal Industry. It seems to me that one might get more accurate information from the Meat Inspection Division of the Bureau of Animal Industry than from the state veterinary departments which, for the most part, are not engaged in doing much laboratory pathologic work.

DR. A. H. SANFORD, Rochester, Minn.: I have the 1920 report of the meat inspection at the slaughter houses of the United States, and, perhaps, should have included it in the paper. The data were published in a paper in *Minnesota Medicine* two years ago. The slaughter houses at Chicago and Omaha show a great preponderance of actinomycosis in inspected cattle; the slaughter houses in the Southern and Eastern states show practically none. One point that Dr. Bassoe brought up is pertinent. I do not pretend to have shown the distribution of actinomycosis in the United States. The only thing I am trying to do is to indicate that it is more prevalent than we are led to believe from the reports of literature. Many men reporting a single case will go back to the last collection of cases, which was made twenty-three years ago, in which there were only 100 cases reported. It seems to me that it would be well to make a new start with the idea that this disease is not so rare, that we are likely to find it at any time, and that it is confused with these other diseases. The disease is not reportable in many states. In Massachusetts it has been reportable since 1907. A large number of cases have been reported. Many health officers wrote that they had no data; that the disease was not reportable. The United States Public Health Service has so many duties to perform in taking care of the health of the country generally that diseases of mycotic origin, so called, are not given any consideration at all in their reports. I hope that in another decade we shall have an entirely different report, as far as mycotic diseases are concerned.

Clinical Notes, Suggestions, and New Instruments

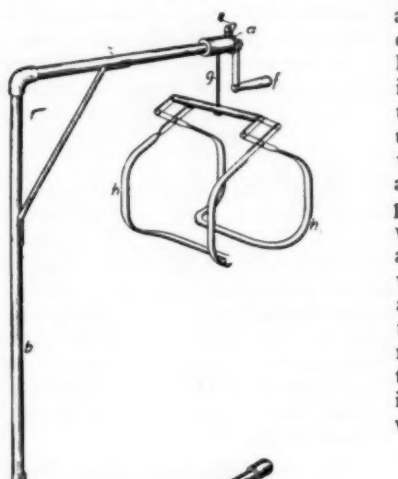
A NEW DEVICE FOR LIFTING AND SUPPORTING PARALYZED OR DISABLED PATIENTS *

CHARLES L. FREYTAG, B.A., M.D., AND FERDINAND FREYTAG, PH.D., SAN FRANCISCO

The difficulties of lifting helpless patients by hand, in order to place them on the bedpan, to have their sheets and bandages renewed, or wounds and sinuses dressed, are great and distressing. To overcome these difficulties, we have, after many disappointing experiments, constructed the apparatus shown in the accompanying drawing.

DESCRIPTION OF APPARATUS

On a strong horizontal base, *a*, mounted on casters, and extending on the floor under the bed of the patient, is supported a vertical stand, *b*, 180 cm. in height, the upper end of which carries a horizontal arm, *c*, 50 cm. long, parallel to the base. A ratchet, *d*, is fastened to the end of the arm, bearing a catch (pawl), *e*, and a crank, *f*. By means of a perpendicular steel cable, *g*, this ratchet is connected to a pair of steel prongs, *h* and *h'*, which are, in shape and size, adapted to the pelvis of the human body, and padded with soft leather or rubber.



Apparatus for lifting patients.

The action of the apparatus is so arranged that, after the base has been adjusted under the bed at right angles to it, a few turns of the ratchet will close the prongs gently but firmly around the patient's pelvis, extending upward to the crest of the ilium and downward to the end of the upper third of the femur. A few additional turns of the crank will lift the patient to any desired height, and the action of the pawl of the ratchet will support him for any length of time. Releasing the pawl and gently turning the crank backward will result in the patient's being lowered on the bed without the slightest inconvenience.

As this device gives a steady side pressure against the pelvis, it forms a valuable substitute for the hammock, the use of which in pelvic fractures has caused so many difficulties that it has been practically abandoned. The objectionable features of the hammock, such as uncleanliness, discomfort and lack of rigidity, are all overcome by our apparatus. As there is no direct pressure against bony prominences, there should be no danger of decubitus.

RESULTS

The apparatus is giving perfect satisfaction even in the most difficult cases. It is absolutely safe, and enables the average nurse to handle the heaviest and most helpless patients easily and unassisted. We hope that it will prove a blessing to many patients, nurses and physicians.

259 Geary Street.

* The right of manufacture has been retained by the Helios Sanitarium, San Rafael, Calif.

BEE STING OF THE UVULA

C. W. GEIGER, M.D., AND J. H. ROTH, M.D., KANKAKEE, ILL.

The youth with open mouth catching flies may have a serious as well as humorous aspect. The average layman rarely has more inconvenience than a revulsion of feeling if an insect happens to fly into the mouth. Occasionally insects are aspirated or swallowed, but they seldom cause distress. Usually they are the kind that fly at twilight or at night. The more aggressive insects, such as bees, wasps, hornets and yellow jackets, are successful in avoiding moving objects. A bee sting of the uvula is unusual and serious enough to warrant a report:

As W. J., a man, aged 26, while riding a motorcycle, turned his head to expectorate, an insect flew into his mouth and on the impact stung. After several attempts the insect was dislodged. It proved to be an ordinary honey bee. Violent gagging and vomiting followed before he was able to reach a physician. He was told that nothing serious would result, and was given a gargle. The patient said that the gargle caused the pain to be worse, and he attributed much of the subsequent swelling to the medication. When we saw him, about six hours after the accident, he was having slight difficulty in speech, and considerable difficulty with swallowing. Breathing and temperature were normal. Examination of the pharynx showed extreme edema of the uvula, which was pale red, tense, and about the size of a man's thumb. The palate and the pillars on the right side were edematous in proportion to the uvula. With cocain applied locally, enough anesthesia was obtained to inspect the parts. At the junction of the anterior pillar and the uvula was a circumscribed area of paleness 5 mm. in diameter with a black center, which proved to be the stinger of the bee. This was removed. Silver nitrate, 10 per cent., was applied as an astringent, and the patient given a gargle of saturated solution of sodium bicarbonate to be used very frequently. His relief began within a few minutes. No multiple punctures of the uvula and pillars were made, as respiration was not impaired. The young man was a transient, and unfortunately was not seen the next day.

A RARE COMPLICATION FOLLOWING APPENDECTOMY

GEORGE WEBB, M.D., LAHAINA, MAUI, H. I.

Mrs. Y., aged 35, Japanese, was admitted to the Pioneer Mill Company Hospital, Feb. 2, 1922, with severe pains in the right lower abdominal quadrant, a temperature of 102, and a pulse ranging from 100 to 110. The diagnosis of acute appendicitis was made (details of the clinical and laboratory examinations are omitted for the sake of brevity), and she was operated on immediately. An enlarged, acutely inflamed and distended appendix was easily delivered and removed. The technic used was the usual one, the stump of the appendix (about 2 mm. in length) being inverted and buried by a purse-string suture. No drains were used, and the convalescence was entirely uneventful. Twelve days later the patient was discharged, feeling well and strong.

April 17, 1923 (two years and two months later), the patient was readmitted to the wards of the hospital complaining of continuous dull pain in the lower right abdominal region of about a month's duration, constipation, a feeling of fulness in the abdomen and loss of appetite.

On palpation of the abdomen, a mass was felt in the ileocecal region, the size of a man's fist, tender and not movable. A roentgenogram (contrast meal and enema) was suggestive of tumor, and showed a fair sized filling defect at the ileocecal junction. There was a moderate leukocytosis. Physical examination was otherwise negative. A tentative diagnosis of tumor (probably tuberculous) was made, and operation was advised.

April 20, operation was performed under ether anesthesia. A right pararectal incision gave ample access to the diseased region. With some difficulty (owing to dense adhesions) a tumor about the size of a large orange and involving the whole ileocecal junction was delivered and resected. Several enlarged adjacent glands were removed at the same

time. A side to side anastomosis was made, and the abdomen was closed in layers with a cigaret drain down to the anastomosis. The patient went through a rather stormy convalescence, during which a fecal fistula formed and shortly afterward closed spontaneously.

The patient was discharged completely recovered and in excellent condition, the beginning of June.

Section of the removed tumor revealed that the lumen of the bowel was considerably narrowed. The bowel wall was about 2 cm. thick all the way round the cecum. On the inside and at the place of the old appendectomy there was a small, thimble-like eminence covered with normal mucous membrane, evidently the old inverted stump. On the bowel wall opposite this stump there was a deep, crateriform ulcer corresponding to it in size and situation. The floor of the ulcer was covered with foul detritus-like masses. The wall of the cecum was thickest at this place. The pathologist's report on the specimen was: inflammatory tissue, no signs of malignancy or tuberculosis.

The probable explanation of this condition is that of a slow pressure necrosis of the opposite bowel wall by the inverted appendix stump, with following reactive inflammatory hyperplasia of the bowel wall and connective tissue proliferation.

New and Nonofficial Remedies

BISMUTH PREPARATIONS IN THE TREATMENT OF SYPHILIS

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following statement of the present status of bismuth preparations in the treatment of syphilis. W. A. PUCKNER, Secretary.

HISTORY

Balzer[1] was the first to make preliminary experiments to determine if bismuth could be used in the treatment of syphilis. He used bismuth citrate chiefly and abandoned his investigation when he found that bismuth compounds produced severe reactions in dogs, especially stomatitis and enteritis.

The investigation was again taken up by Sauton and Robert[2] who used a method similar to Ehrlich and Hata's experiments on the spirillocidal action of arsenical compounds. They studied the action of a so-called sodium tartrobismuthate in hens infected with *Spirochaetae gallinarum*. The results which are the real fundament of the later researches were sufficiently favorable to induce them to extend their work to syphilis and recurrent fever. The study was interrupted by the war and the death of Sauton.

Sazerac and Levaditi[3] continued the investigations and tested different compounds of bismuth and the metal itself in experimental syphilis of rabbits and in trypanosomiasis. They recommended a compound, which they said was a sodium and potassium tartrobismuthate, for further tests in human syphilis.[4] Rabbits tolerated from 50 to 60 mg. of this drug per kilogram of body weight, when injected intramuscularly. The experimenters found 100 mg. to be the toxic dose, while 200 mg. proved lethal within from two to four days. The toxic effects of intravenous injections were in a striking contrast to the comparatively high dose tolerated intramuscularly. An intravenous injection of 5 mg. per kg. caused death. Whether the difference is due to the slow absorption after intramuscular injections of the drug, or to other causes is not known. The so-called *"curative dose"* of sodium and potassium tartrobismuthate in oil suspensions in syphilis of rabbits is at least 0.05 gm. per kg. of body weight, which is about one fourth of the lethal dose. Milian pointed out that the tolerated dose in man is much smaller than the sterilizing dose would be. The total amount which can be administered per kilogram in man in a period longer than a month hardly reaches the single minimal *"curative dose"* per kilogram in rabbits. The comparison of the effect of intramuscular injections of insoluble drugs is of course more difficult than of intravenous injections of arsphenamine and other drugs.

The first clinical tests were made by Fournier and Guenot[5] on 200 patients in different stages of syphilis, and the results were favorable. Numerous other authors have reported since on the effects of different preparations of bismuth in experimental and human syphilis, and the results obtained agree fairly. Among the more comprehensive reports are those by Klauder,[6] Hopkins,[7] and Pardo-Castello,[8] which may also be consulted for a more extensive review of literature.

The action on visible lesions in all stages of syphilis is distinct, though most of the authors admit that it is inferior to arsphenamine preparations. Neurosyphilis is also favorably influenced, though resistent cases are reported as with every other drug. Neurorecidives have not been observed so far, but the drug has not been used sufficiently to exclude such possibilities. It is generally agreed that the effect on the Wassermann reaction is slower than with arsphenamine. Some cases, however, which had remained positive in spite of treatment with arsphenamine and mercury, became negative after bismuth. Relapses occur.

UNTOWARD EFFECTS

Bismuth may cause a stomatitis characterized in milder cases by foul breath and a blue line on the gums. Pseudomembranes and ulcerations infected with fusiform bacilli and Vincent's spirochetes appear in severe cases. Enterocolitis is less frequent. Symptoms of slight lesions of the kidneys (polyuria, albuminuria) were observed. Severe nephritis is rare. Chills and fever sometimes follow the injections. While a rapid increase in weight has been observed after the first injections, prolonged treatment may cause loss in weight, headaches, fatigue and jaundice. It is a question if the increase in weight is a favorable symptom or whether it is due to retention of water by toxic action on the capillaries. Toxic exanthems have been reported.

METHOD OF USE

Fournier and Guenot recommend the administration of from 10 to 12 intramuscular injections of from 0.2 to 0.3 gm. of their "potassium and sodium tartrobismuthate" in oil suspension in about one month. The majority of other authors give smaller doses (0.1 gm.) or make longer intervals (4 days). Individualization is necessary, as everywhere. The interval between doses must be extended if the warning symptom of foul breath or other signs of intolerance appear. The resorption is not regular and may be checked by roentgenograms. After the course of from 10 to 12 injections one month of rest is given and the treatment may be repeated. Injections especially of higher doses are painful. Anesthetics may be added.

SUMMARY

1. Bismuth preparations have a sufficient experimental basis both for their favorable effects and limitations. The advantage consists in their distinct action on experimental syphilis. The limitations are clear, if one considers the disproportion between the large dose, which is necessary to sterilize an animal, and the small dose, which can be tolerated by man. The available information appears to show that bismuth preparations will not cure syphilis, when used alone.

2. Bismuth treatment is not usually injurious if the necessary precautions (observations for beginning stomatitis, examination of urine, etc.) are observed. Intravenous injection is to be strictly avoided. The therapeutic effect of bismuth is rated by the majority of authors between arsphenamine and mercury. Bismuth compounds may be valuable in cases in which the patients are intolerant to the other drugs used in the treatment of syphilis or resistant to them, as shown by a persistent positive Wassermann reaction.

1. Balzer, M. F.: Compt. rend. Soc. de biol. **41**: 537, 1889.
2. Sauton, B., and Robert, A. E.: Ann. Past. **30**: 261, 1916.
3. Sazerac, R., and Levaditi, C.: Ann. Past. **36**: 1 (Jan.) 1922.
4. Bismuth tartrate compounds appear to have been first described by Schwarzenberg (Ann. Chem. Pharm. **61**: 244, 1847). Since then many chemists have prepared compounds of bismuth and tartaric acid. Sauton and Robert prepared their drug by the method given by Cowley (Chem. Drug. **82**: 212, 1913). Levaditi and Sazerac apparently prepared the compound which they called tartrobismuthate of sodium and potassium by the Cowley method, but without dissolving the precipitate (which is obtained in next to the last step of the operation) in sodium hydroxid.
5. Fournier, L., and Guenot, L.: Ann. Past. **36**: 14 (Jan.) 1922.
6. Klauder, J. V.: Arch. Dermat. & Syph. **7**: 721 (June) 1923.
7. Hopkins, J. G.: Arch. Dermat. & Syph. **7**: 745 (June) 1923.
8. Pardo-Castello, V.: Arch. Derm. & Syph. **7**: 586 (May) 1923.

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SATURDAY, AUGUST 25, 1923

HUMAN COLOSTRUM

To Theobald Smith and his co-workers in the Department of Animal Pathology of the Rockefeller Institute at Princeton, N. J., is due the important discovery that the colostrum of the cow is the chief agent for transferring known antibodies to the new-born calf. The earliest postpartum secretion of the mammary gland may be regarded almost as essential to survival in the case of this animal. Calves which have never received colostrum are extremely likely to succumb during the first week of life to the common invasion of the alimentary tract with organisms of the *Bacillus coli* group. Furthermore, it has been shown by the Princeton investigators that the blood of the new-born calf, before ingestion of colostrum, is lacking in certain characteristic proteins which rapidly make their appearance in the circulation when the animals are colostrum-fed. As might be expected, these findings in cattle prompted the conclusion that colostrum must also be of great importance to the human species—a view in part seemingly substantiated by the observation that the blood of the new-born infant is lacking in euglobulin, which seems to increase in quantity as soon as human colostrum has been ingested.

On reflection, it is obvious that early immunity may be conferred on the offspring either through the placenta or with the colostral milk. The records obtained with some species indicate clearly that the placenta is impermeable to proteins, and does not permit the passage of maternal antibodies. Indeed, earlier investigators frequently expressed the belief that antibodies appear in the fetal blood only when the placenta is injured in some way; and they regarded placental transmission of antibodies as a pathologic rather than a physiologic process. Such conclusions, it should be emphasized here, were derived from studies of laboratory animals. In harmony with data already on record, Kuttner and Ratner[1] of Columbia University College of Physicians and Surgeons have found that the human placenta is permeable to diphtheria antitoxin. According to their determinations, the concentration of the latter in cord blood corresponds with considerable accuracy to that in the blood of the mothers, there being no measurable loss of antitoxin in passage through the placenta. Kuttner and Ratner state that human colostrum occasionally contains small amounts of the antitoxin; but the quantity is always less per volume than is found in the blood serum of the mother or in the cord blood. In the cases studied, the antitoxin content of the infants' blood failed to show an increase attributable to colostrum feeding. Furthermore, in contrast to what is clearly the case in calves, clinical studies have failed to reveal to the New York investigators evidence of possible harm to the infant resulting from the omission of colostrum from its earliest diet.

How are such apparent discrepancies between the species studied to be explained? Kuttner and Ratner remind us that well-known histologic differences in the placentas of the various animals may suffice to account for the varying results with respect to placental exchange. In the human organ the maternal blood is separated from the fetal by a single layer of cells, whereas in the ruminant the placenta consists of three-cell layers. The differences in permeability seem to be in accord with the unlike physical basis offered by the dissimilarity of structure. In goats and cows, with a placental make-up that is fairly complex, placental transmission of immune substances may not occur, so that the colostrum becomes the main agent for transmitting immunity from mother to offspring. In man it is otherwise. In this connection, reference has been made by Kuttner and Ratner to some of the striking differences in the conditions of the mammary secretion in animals, such as cows, with the placenta impermeable, and the new-born calf dependent mainly on colostrum for the transmission of antibodies; and in man, with the placental structure simpler and more permeable. The cow's udder at the time of parturition, they point out, is filled with approximately 20 pounds (9 kg.) of colostrum, which is immediately and reflexly ingested by the calf shortly after birth to the extent of about 2 pounds (0.9 kg.) at the first feeding. In human beings, colostrum does not appear for at least twelve hours after birth, and is secreted in amounts not greater than 5 c.c. in the first twenty-four hours after birth, and not exceeding 90 c.c. after forty-eight hours. In the face of the great interest recently awakened in the possible functions of colostrum, a problem long before physiologists and pediatricians, it would probably be a step too far backward to conclude that colostrum feeding has no significance whatever to the human infant—until the evidence is more compelling. But the earlier enthusiasm for the immunity functions of the first formed milk are being somewhat dispelled so far as the human species is concerned.

1. Kuttner, Ann; and Ratner, Bret: The Importance of Colostrum to the New-Born Infant, Am. J. Dis. Child. **25**: 413 (June) 1923.

FUNCTIONS OF THE PARATHYROIDS

Fourteen years ago, two investigators [1] at the Johns Hopkins University Medical Department formulated the theory that the parathyroids control the metabolism of calcium and in this way exert an influence on the nervous system, which is singularly reactive to marked alterations in the calcium content of the fluids that bathe it. The theory has experienced various vicissitudes and led to disappointment, because some of the attempts to apply it to the conditions prevailing after removal of the parathyroid structures ended in failure. Extirpation of the glands is now known definitely to lead to a drop in the otherwise constant level of calcium content in the blood. Whenever this occurs, whether as the result of parathyroidectomy or for other reasons, tetany is almost certain to ensue when an adequate degree of lowering has been attained. In such conditions the administration of calcium salts, particularly by the intravenous method, often brings relief; but the goal of preserving the life of individuals deprived of their parathyroids was not regarded as attainable by calcium therapy. Another obstacle to the ready acceptance of the calcium-control theory of parathyroid function has been the fact that the tetany has been averted by methods which seemed to have no obvious relation to calcium administration.

A renewed investigation of the subject by Salvesen [2] at the University of Christiania leaves little doubt that the parathyroids do control the calcium level of the blood, and by doing so influence the function not only of the muscular and nervous tissues, but probably also of all organs. The behavior of the calcium in the blood, which has been carefully studied by this Norwegian physiologist, indicates that the recovery of completely parathyroidectomized dogs—which he has actually accomplished by calcium treatment—is not due to a compensatory function of some accessory glands. All the symptoms are relieved and the animals made normal for a while by intravenous injection of calcium chlorid. The symptoms reappear after a time, but not until the blood calcium has again reached a low level. An outstanding observation is the fact that the injected calcium is very rapidly excreted through the intestine, and only small amounts appear in the urine; even large doses disappear in a remarkably short time. This accounts, as Salvesen points out for the first time, for the fact that it has been so difficult to preserve parathyroidectomized animals by injection of calcium salts. The favorable influence of milk is readily explained when one recalls that this fluid has a calcium content equivalent to a 1 per cent. solution of calcium lactate.

What, then, is the cause of the drop in blood calcium which is so menacing and so difficult to combat permanently? Salvesen ascribes it to "a lowered threshold for the excretion of calcium in the intestine." This element seems literally to leak away from the blood and be lost through the bowel. Such a process apparently causes a calcium deficiency and thereby all of its symptoms. One may consequently conceive of the parathyroid as furnishing some "hormone" which ordinarily prevents this unlimited excretion of calcium through the alimentary tract. That the "permeability" of the intestine in one direction or another may be modified by dietary factors has already been intimated.[3] Many novel lines of thought and investigation are opened up by these studies.

1. MacCallum, W. G., and Voegtlin, Carl: J. Exper. Med. **11**: 118, 1909.

2. Salvesen, H. A.: The Function of the Parathyroids, J. Biol. Chem. **56**: 443 (June) 1923; Proc. Soc. Exper. Biol. & Med. **20**: 204, 1922-1923.

THE SYSTEMIC TREATMENT OF EXTENSIVE SUPERFICIAL BURNS

The occurrence and clinical consequences of anhydremia have lately acquired considerable prominence in medical litarature. There is accumulating evidence that an animal or a man cannot long survive a concentration of blood to 140 per cent. of the normal value; indeed, when it reaches even 125 per cent., conditions for the maintenance of life are reported to become precarious. The tardiness of interest in the possibilities of such situations is probably attributable to the circumstance that changes in the water content of the circulation do not obtrude themselves on our notice as so many other symptoms do; nor have they heretofore been looked for as frequently and assiduously as their significance now seems to warrant. Changes in the concentration are easily followed under ordinary circumstances by the simple expedient of determining the content of a characteristic component of the blood, namely, hemoglobin.

It has not been difficult to understand that when there are obvious large losses of fluid, as through diarrhea or vomiting, the concentration of the blood in dissolved substances may become altered unless some compensatory process of dilution is effected. Underhill and his collaborators at the Yale School of Medicine have recently pointed out how inflammatory reactions of various sorts may lead to blood concentration. In the acute massive edema of the lungs brought about by poisoning with war gases, and in certain types of influenza, this is what occurs through segregation of fluid in damaged pulmonary areas. And now we are reminded that other extreme inflammatory reactions, such as are seen in extensive superficial burns, meet a similar response on the part of the body. Fluid is poured out on the surface of the injured area. Up to a certain point, the greater and more acute the inflammatory reaction, the greater and more rapid will be the response.

The actual occurrence of threatening degrees of concentration of the blood in burned patients has now been

3. The Sources of Calcium for the Body, editorial, J. A. M. A. **81**: 394 (Aug. 4) 1923.

clearly demonstrated.[1] Furthermore, the logical consequences with respect to treatment of the cases of severe superficial burns have been applied with gratifying results in a considerable number of cases. The burned areas obviously require adequate local treatment, about the preferred technic of which there still is considerable difference in practice. But, according to Underhill's report, rapid and continued introduction of fluid by all possible channels, as by mouth, by rectum, subcutaneously or even intravenously, will cause a gradual return of the blood concentration to normal and a comparable improvement in systemic signs and symptoms. One may assume that the hypothetic poisons said to be associated with severe burns will be diluted so as to diminish their toxicity and promote their elimination. At any rate, we are assured from the New Haven experiences that restoration of normal blood concentration by adequate forcing of fluid is accompanied by marked evidences of improvement, and the development of some of the common sequels (delirium, unconsciousness, gastro-intestinal disturbance, albuminuria, hemoglobinuria) of extensive burns may be checked.

If we may accept Underhill's fortunate conclusion that under such a treatment "the vast majority of badly burned patients ultimately recover," it behooves the clinician to secure in the systemic treatment of burn cases decrease in blood concentration to a point near the normal limit. We are told that the determination of the degree of blood concentration may be regarded as an index of the patient's general condition, and will also indicate the extent to which fluid should be forced. In considering the possible outcome, the added possible favorable effect of restoration of blood fluid on blood pressure must also not be overlooked. Low arterial tension is a symptom long recognized to attend certain cases of superficial burn. If marked concentration of the blood can be a primary etiologic factor in connection with a failing circulation, insufficient carriage of oxygen with consequent oxygen starvation of the tissues, fall in temperature and other threatening phenomena, a relatively simple method of combating it must be very welcome. The mode of detection and the technic of therapy referred to call for procedures that are easily within the reach of every practitioner.

1. Underhill, F. P.; Carrington, G. L.; Kapsinow, Robert, and Pack, G. T.: Blood Concentration Changes in Extensive Superficial Burns, and Their Significance for Systemic Treatment, Arch. Int. Med. **32**: 31 (July) 1923.

Tetrachrome Blood Stain.—The tetrachrome blood stain devised by Ward J. MacNeal is a mixture of four stains used for staining blood cells and hematozoa: water-soluble eosin, 1.0 gm.; medicinally pure methylene blue, 1.0 gm.; methylene azure, recrystallized, 0.6 gm.; methylene violet, recrystallized, 0.2 gm.; pure methyl alcohol (Merck's Reagent), 1000.0 c.c. This stain is recommended as a satisfactory imitation of the Leishman stain because of the excellent results in staining blood films, the uniformity of composition and the low cost. The latter is of some importance in large hospitals where many specimens have to be examined daily.—(*Proc. New York Path. Soc.* **22**:43 [Jan.-May] 1922).

Current Comment

OPERATIONS ON THE HEART FOR RELIEF OF VALVULAR STENOSIS

In 1902, Sir Lauder Brunton suggested the possibility of treating valvular disease of the heart surgically, and various investigators since that time have attempted to widen stenotic valves, apparently succeeding, however, only in creating defective valves with subsequent regurgitation. Last year, Allen and Graham devised a method for cutting the valves through the use of a cardioscope carrying a small knife. For some time Cutler and Levine[1] have been experimenting on animals, producing stenosis of the mitral valve mechanically, and determining in this manner the ability of the heart muscle to withstand trauma in various methods of restoring function. It has been their experience that the use of the cardioscope is so much more complicated than the direct use of the valvulotome that the latter method is preferable. In May, 1923, operation was attempted in the case of a girl, aged 12 years, who had been confined to bed for more than six months because of a heart lesion, and who had rapid pulse and severe dyspnea with pulmonary hemorrhages following any attempt to get out of bed. The patient could not lie flat, was cyanotic, had a heart rate of 126, and had some congestion of the lungs. She appeared to be the victim of typical mitral stenosis without cardiac reserve. Examination indicated that the stenosis was sufficient to be an important factor from a purely mechanical point of view. Electrocardiographic and blood pressure observations were made, and on May 20, 1923, operation was performed. In their report, the authors give the complete details of this operation, which involved exposure of the heart, splitting of the pericardium, insertion of the valvulotome into the left ventricle, and incision of two leaflets of the mitral valve. Following this, the ventricle was sewed with mattress sutures and the pericardium closed with silk. The convalescence was marked by rapid pulse, pain over the sternum, and respirations rising to 45. However, the patient responded well to digitalis and oxygen therapy. Toward the end of the third day after operation, the patient became more comfortable, and on the fourth day convalescence became rapid. Seven days after operation, the sutures and all dressings were removed; and in the illustrations, showing the girl sitting up in bed, she appears quite comfortable. The authors state that they are unable at this time to define with accuracy just what has occurred or what benefits have accrued, if any. The experience does show, however, that surgical intervention in such cases may be successfully made. In view of the fact that mitral stenosis is a chronic condition, for which there is no successful treatment and in which the prognosis is invariably bad, the method is of unusual interest. The operation is, of course, hazardous and not to be undertaken lightly. The report itself bears special testimony to the manner

1. Cutler, E. C., and Levine, S. A.: Cardiotomy and Valvulotomy for Mitral Stenosis: Experimental Observations and Clinical Notes Concerning an Operated Case with Recovery, Boston M. & S. J. **188**: 1023-1027 (June 28) 1923.

in which progress may come through properly conducted experimental surgery: first, a careful study of underlying factors; second, a thorough working out of methods and technic on experimental animals and, finally, the application of the results to the human being.

THE DISTRIBUTION OF TULAREMIA

Tularemia, the most recently reported infectious disease of man, is ordinarily transmitted from rabbits by the bite of an insect. Many human cases have been reported from Utah and two from Ohio. Now the organism has been found in rabbits on sale in Washington, D. C.[1] Among a large number of rabbits examined at the market, seven presented macroscopic evidence of this disease. The diagnosis was confirmed by inoculating guinea-pigs with suspected material, and recovering *Bacterium tularense* in pure culture in every instance. The dealer at whose stand the rabbits were found handled them without becoming infected. He had had tularemia about a year before, however, and was immune. His blood serum agglutinated *Bacterium tularense* in a dilution of 1:100 repeatedly, and as late as March of this year. The region from which the first five rabbits were shipped could not be traced. The last two came from different points in Tennessee. The known distribution of tularemia has thus been extended. In addition to the states mentioned, this infection has been found in California, Idaho, Wyoming, Colorado, Indiana and North Carolina. Only one fatal case has been reported, it appears, but tularemia disables its victims for several weeks. With the approach of cool weather and heavier traffic in rabbits for the markets, an opportunity will be afforded to study further the distribution of this disease, as well as to rid the markets of undesirable food.

1. Francis, Edward: Tularemia in the Washington (D. C.) Market, Pub. Health Rep. **38**: 1391 (June 22) 1923.

THE NATURE OF THIRST

Hunger and thirst are sensations that not infrequently demand serious clinical consideration. They may become sources of distress to a patient and therefore require to be combated in some way. Now and then circumstances arise which preclude relief through the simple expedients of eating and drinking. Conditions often ensue whereby food cannot be ingested in the usual way, or it cannot be digested and utilized even if it can be consumed. The control of hunger as a sensation consists primarily in checking the distressing contractions of the gastric musculature when the stomach has been empty for some time. Inability to drink fluids can be more easily combated because water can be introduced into the organism with considerable ease in a variety of other ways than by mouth. Rectal, intravenous and subcutaneous paths of administration of fluid are available in an emergency. Nevertheless, it is important to know whether the sensation of thirst represents the direct effects of loss of water from the tissues and is "general" in character, with only a secondary local reference to the pharynx; or whether it is essentially a sensation limited to the mucous membrane of the mouth and throat to which it is popularly referred by the subject. In case the latter was true, relief might temporarily be secured by purely local treatment. Cannon[1] has championed the view that thirst is due to a relative drying of the mucosa of the mouth or pharynx. The desiccation, he believes, may be due to either a diminution or absence of the salivary secretion, a condition arising as the result of loss of water in the tissues through diarrhea, polyuria, etc., or such local factors as mouth breathing, prolonged singing and speaking. Substantiation of Cannon's theory has been furnished recently by Pack[2] at Yale University. He has observed that thirst is relieved, in animals deprived of water, by administration of drugs, such as pilocarpin, which promote the flow of saliva. This method, however, has not been found successful in severe cases of diabetes insipidus or chronic polyuria.[3] It still remains an open question, therefore, whether in the latter malady thirst is not the expression of other factors than mere dryness of the oral membranes.

THE THYROID HORMONE

The fact that the iodin-bearing compound thyroxin, which has been isolated through a series of chemical manipulations from thyroid tissue, has a marked physiologic potency has led many persons to speak of it offhand as the "active principle" of the thyroid glands. It does not minimize the importance of the splendid researches that led to the discovery of thyroxin nor detract from its therapeutic usefulness to raise the question whether, in truth, the thyroid hormone is to be identified with this well defined chemical substance. It has been known for some time that a protein constituent of the glandular tissue, notably the globulin fraction extractable from it, will elicit many of the effects secured by thyroid medication. Tests recently conducted by Hunt[4] at the Medical School of Harvard University have tended to indicate that, for certain functions at least, thyroxin shows less potency than an equivalent dose of iodin in the form of the entire thyroid gland. One is led to ask, therefore, whether the iodized protein fragment isolated by Kendall retains all of the specific physiologic actions of the real thyroid hormone, and whether thyroxin can entirely replace the latter in man and animals in the complete absence of thyroids. In considering such problems it will be helpful to learn, if possible, in what form the thyroid hormone actually leaves the glandular structures that produce it, and how it circulates in the organism. An interesting contribution was recently made by Hektoen, Carlson and Schulhof[5] of Chicago. By the use of serologic methods they have demonstrated the presence of a thyroid product, thyroglobulin, in the lymph issuing from the thyroid gland. Thus far, they have failed to detect the same protein in the

1. Cannon, W. B.: Proc. Roy. Soc. London, Series B, **90**: 283, 1919.
2. Pack, G. T.: New Experiments on the Nature of the Sensation of Thirst, Am. J. Physiol. **65**: 346 (July) 1923.
3. Weir, J. F.; Larson, E. E., and Rowntree, L. G.: Studies in Diabetes Insipidus: Water Balance and Water Intoxication, Arch. Int. Med. **29**: 306 (March) 1922.
4. Hunt, Reid: Am. J. Physiol. **63**: 257 (Jan.) 1923.
5. Hektoen, Ludvig; Carlson, A. J., and Schulhof, Kamil: The Precipitin Reaction of Thyroglobulin, J. A. M. A. **81**: 86 (July 14) 1923.

general circulation. It must be recalled, in this connection, that the existence of thyroxin or a related product in the blood stream has been intimated as the result of determinations of iodin in the fluid. The Chicago investigators assert that their inability to find thyroglobulin there by means of the precipitin test may have been due to the great dilution of the thyroid lymph when mixed with the total blood, or to a rapid absorption of thyroglobulin by the tissues; perhaps, also, the product is speedily disintegrated into derivatives like thyroxin, which do not betray themselves by serologic evidence. At any rate, attention must now be centered on the lymphatics as well as the blood capillaries as the carriers of gland hormones. As Hektoen, Carlson and Schulhof point out, other hormones present problems similar to that of the thyroid product. They add, further, that there is as yet no proof that the internal secretion of the suprarenal medulla, for instance, is really epinephrin and not some more complex compound.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALASKA

Personal.—Dr. John J. Myers, Lodi, Calif., has been appointed director of the government hospital at Juneau.

CALIFORNIA

Additions to State Hospital.—Four additional cottages have been constructed to relieve congestion at the Southern California State Hospital at Patton.

Chiropractor Imprisoned.—Dr. H. C. Saunders, Huntington Beach, having failed in his appeal to obtain a reversal of the judgment of the superior court, following a trial for practicing medicine without a license, in September, 1922, started serving his sentence of 120 days, July 24, according to reports.

Validity of Health Act Upheld by Court.—Judge Plummer handed down, August 2, a decision upholding the constitutionality of the act under which the San Joaquin County Health District was created. The court held that the health district is a legal subsisting agency, duly established according to the laws of the state. The prayer for an injunction to prevent the levy of $96,000 tax for the expenses of the health district during the fiscal year starting July 1, 1923, was denied, but it is now legal for the health district to draw warrants for expenses incurred on or after July 1. These warrants will be paid when the next tax money is available in December. The action was brought by E. G. Stuckenbruck and a taxpayer against the board of supervisors for an injunction to prevent the tax levy for the health district. This was followed by a mandamus suit by the health district and the Cutter Laboratory against the county auditor and treasurer to compel the issuing and payment of warrants on the county for health district expenditures. Both actions were brought to test the legality of the district. Dr. John J. Sippy, formerly of Helena, Mont., recently was appointed county health officer and executive of the health district.

COLORADO

Personal.—Dr. Hunley S. Day was appointed county physician to succeed the late Dr. Hampton S. Henderson, effective August 1.

FLORIDA

Personal.—Dr. Charles W. Tompkins, health officer of South Jacksonville, has resigned and will go to Washington, D. C., to live.

Sanitary and Health Officers' Course.—A school of instruction for city health officers and sanitary inspectors will be held by the state board of health, in Jacksonville, September 18-22, according to Col. Raymond C. Turck, state health officer. The course will be given in order that the methods of sanitary control throughout the state may be uniform.

GEORGIA

New State Tuberculosis Sanatorium.—An appropriation of $500,000 will be asked at the next session of the state legislature for the purpose of establishing a state tuberculosis sanatorium near Alto.

IDAHO

Personal.—Dr. Raymond J. Cluen, Boise, recently appointed physician for the Idaho penitentiary, has tendered his resignation to the state board of prison commissioners. Dr. George Collister, Boise, has been appointed to fill the vacancy.—Dr. Clayton A. Hoover, medical superintendent of the Idaho Insane Asylum, Blackfoot, has resigned.——Dr. Joseph Fremstad, Burley, owner of the Fremstad Hospital, is giving up the institution and moving to Everett, Wash.

ILLINOIS

Personal.—The Jo Daviess County Medical Society gave a banquet, August 9, to Dr. I. Carson Smith, Stockton, in honor of his fortieth year of practice in the county. Physicians from Dubuque, Iowa, presented Dr. Smith with a gold-headed cane.

Central Illinois Radiological Society.—At the annual meeting of the society, recently, Dr. James H. Finch, Champaign, was elected president; Dr. Harold Swanberg, Quincy, vice president, and Dr. Perry B. Goodwin, Peoria, secretary-treasurer.

Medical Milk Commissions.—The Adams County Medical Society has appointed Drs. Thomas B. Knox, John A. Koch and Arthur H. Bitter, all of Quincy, and the Peoria City Medical Society has appointed Drs. Sumner M. Miller, Edward E. Barbour, Jacob M. Furstman and Aloysius J. Kanne as members of a medical milk commission, a branch of the American Association of Medical Milk Commissions.

Chicago

Augustana Superintendent Dead.—Matthias Wahlstrom, D.D., superintendent of Augustana Hospital since 1904, died, August 15, of cerebral hemorrhage, aged 72.

Behavior Clinic for Children.—A clinic for unruly children will be established at Rush Medical College. The clinic will specialize in neurotic children between the ages of 3 and 14. Home conditions will be investigated by physicians and nurses.

Hospital Drive Opens.—For the first time in its history, the Evangelical Deaconess Hospital has had to request public aid. A drive has been launched to collect $500,000 to erect a larger health center. Of the 4,000 calls made last year, 30 per cent. of those treated at the institution were charity patients.

Society of Medical History of Chicago.—The society is collecting historic medical publications of this region. Two files are not complete. It is requested that physicians having volumes of the *Chicago Medical Journal and Examiner*, 1880 to 1889 (40 to 58), and *Transactions of the Illinois State Medical Society*, Vol. 5 (1885) and from 1864 to 1871, might place them where they would have a permanent value.

IOWA

Hospital News.—Plans have been completed for the erection of a $125,000 hospital building at Cherokee. The state board of control, Des Moines, is owner of the property.

Personal.—Dr. William C. Behen, Dubuque, recently received from Poland the Cross of Valor for service during the Bolshevist uprising in 1920. Dr. Behen also received the Order of the Eagle and a gold medal (San Salva) from the Serbian government for services in that country.

KANSAS

Personal.—Dr. Samuel J. Crumbine, Topeka, until recently state health officer of Kansas, has been appointed associate director of medical service of the American Child Health Association. Dr. Crumbine will visit Southern communities which have applied for a child health demonstration, and will make recommendations as to which community is best suited

for a successful demonstration. He will also confer with state health authorities in regard to promoting birth registration in states not yet in the U. S. registration area.

LOUISIANA

Jury Indicts Physicians.—According to reports, the federal grand jury, August 3, returned indictments against Drs. G. F. Cocker and A. Ledoux, two New Orleans physicians, for violations of the Harrison Narcotic Law. Both were arrested several weeks ago by federal narcotic agents, charged with issuing narcotic prescriptions unlawfully to drug addicts.

MASSACHUSETTS

Physician's License Revoked.—The board of registration in medicine of Massachusetts, July 23, revoked the registration of Dr. James P. A. Nolan, Boston, following complaint of a patient that he had terminated her pregnancy by an illegal operation. The board asserted that it "believed the practice of medicine by him to be a menace to the health and morals of the public."

Hospital News.—Plans have been completed for the erection of a new two-story and basement building for Waltham Hospital, Waltham.——A new nurses' home to accommodate forty-four nurses will be erected for the Marlboro Hospital, Marlboro.——Bids are being taken on the general contract for the new unit of Cape Cod Hospital, Hyannis, which will be erected at an estimated cost of $150,000.

Personal.—Dr. Elliott S. Robinson has been appointed assistant director of the division of biologic laboratories of the Massachusetts State Department of Health to succeed Dr. Robert N. Nye.——Dr. William F. Holzer, Worcester, formerly of the City Hospital, Boston, has been appointed oculist-in-chief at the Memorial Hospital.——Dr. Nathaniel Allison, St. Louis, has been appointed chief of the orthopedic department of the Massachusetts General Hospital.

MICHIGAN

Food Handlers' Clinic.—The Department of Health of Detroit has added an educational program to the work of the Food Handlers' Clinic, and changed the name to the Food Handlers' Clinic and School. Lectures on food sanitation and personal hygiene will be given in addition to physical examinations.

Hospital News.—The Catholic Sisters who conduct St. Mary's Hospital, Grand Rapids, will sell the nurses' home that is connected with that institution, according to reports. They will conduct a campaign in the fall for the erection of two additional buildings.——The Battle Creek Sanatorium entertained Prof. J. B. Pavlov and his son of Petrograd, Russia, at a banquet, July 9. Nearly 200 physicians from all over the state and their wives, attended.——A new infirmary will be erected at Alpena at a cost of $75,000.——With the cooperation of the steel industries which own mines in the city limits, Wakefield plans to erect a municipal hospital.——The cornerstone of the James W. Sheldon Memorial Hospital, Albion, was laid recently.

MINNESOTA

Funds for New Dispensary.—An additional sum of $150,000 has been set aside from the surplus of the Amherst H. Wilder Charity, Incorporated, for the St. Paul Dispensary, now under construction near the Miller Hospital, St. Paul. The charity formerly set aside $300,000 for the dispensary.

Physicians Endorse Sanatorium Proposal.—Members of the Stearns-Benton County Medical Society, at a meeting at Pelican Lake, July 17, adopted a resolution endorsing a proposal for erecting a tuberculosis sanatorium for Stearns and adjoining counties. Dr. George Bosworth, of the state advisory committee on tuberculous sanitation, stated that $50,000 in state aid could be obtained for the project.

MISSOURI

Naprapath Fined.—According to reports, Edward Barnett, St. Louis, was recently found guilty in the court of criminal correction of practicing medicine without a license. He claimed to be a doctor of naprapathy.

A Physician Eighty-Three Years.—Dr. Joseph Singer Halstead, Breckenridge, is the oldest physician in the United States, it is reported. Dr. Halsted graduated from the Medical Department, Transylvania University, Louisville, 1840. He was born March 5, 1818, and is a veteran of the Civil War.

MONTANA

Hospital News.—The contract has been let for the construction of the new addition to St. Patrick's Hospital, Missoula, for $150,000. The institution, which will be ready for occupancy by February, 1924, will be five stories high and of brick and concrete construction.——The Columbia Hospital, Butte, closed its doors, August 1.

NEVADA

Court Rules Gas Not Inhuman Death Penalty.—The Nevada State Supreme Court ruled, August 20, in denying a second petition for rehearing in the cases of Gee Jon and Jugh Sing, Chinese tong murderers, under sentence of death, that the execution of criminals by lethal gas is not cruel or inhuman. An appeal will be made to the U. S. Supreme Court.

NEW JERSEY

Campaign Against Rabies.—An emergency appropriation of $1,000 was made by the Bayonne Health Board, June 12, to combat the stray dog nuisance. The city health officer is endeavoring to have all dogs vaccinated. Fourteen persons have been bitten recently. Eleven of the dogs were found to have rabies. It is estimated that the cost to the city of each case will be $40.

Personal.—Dr. Thomas A. Clay has been succeeded by Dr. Frederick P. Lee as health officer of Paterson. Dr. Lee was formerly health officer of New Britain, Conn.——Dr. Lewis S. Herndon, Newark, has been awarded the French Croix de Guerre, with gilt star, in recognition of service during a gas attack near Soissons, France, in 1918, while serving with the Medical Corps of the A. E. F.

New York City

Maternal Hospital to Build.—The Jewish Maternity Hospital has purchased four lots at the northwest corner of Fifth Avenue and One Hundred and Eighth Street, where it plans to build a new twelve-story hospital building, which, when equipped, will cost about $1,000,000, and provide 150 beds. Most of the necessary funds have been subscribed.

Hay-Fever Clinic Opens.—A new department for the scientific diagnosis of hay-fever, asthma and kindred maladies was opened at the Victory Memorial Hospital, Brooklyn, August 16. After the diagnosis has been made, applicants will be referred to their family physicians. The clinic, which will be open Monday, Wednesday and Friday evenings, is equipped to care for 2,000 patients a week.

Personal.—Dr. L. Miller Kahn has been appointed attending surgeon at Beth David Hospital.——Dr. James P. Hunt has been appointed head of the tuberculosis division of the U. S. Veterans' Bureau to succeed Dr. Stanley M. Rinehart, Washington, D. C., resigned.——Dr. G. Sanneman, in charge of the public health service, the Port of Hamburg, Germany, recently arrived in this country. He will spend a month studying methods of the United States health officers at Quarantine Station, Staten Island.

The Flagler Memorial.—Papers have been filed at Albany approving the incorporation of the Alice Mandelick Flagler Foundation. This opens the way for carrying out the plan of the late John H. Flagler to establish a memorial to his deceased wife. The foundation is organized for charitable purposes, and especially to assist nurses. It is believed the share of the Flagler estate which will go to the foundation will be about $500,000. The residual portion will be divided equally among St. Luke's, New York and the Presbyterian hospitals.

NORTH CAROLINA

Hospital News.—A four-story administration building and hospital wing has been begun for St. Joseph's Sanatorium, Ashville. The structure, which is to be completed by Jan. 1, 1924, will have seventy-five rooms and will cost about $140,000.

Dr. Rankin to Help New York.—Dr. Watson S. Rankin, Raleigh, state health officer, has been requested by the state health department of New York to aid that department for one year. Dr. Rankin formally applied for leave of absence from the South Carolina State Board of Health, August 17.

Personal.—Dr. John S. McKee, for many years city physician of Raleigh, has again been appointed to the position to succeed Dr. Luther T. Buchanan, Raleigh, who resigned after two months' service.——Dr. Thomas Craven, Huntersville, has been appointed assistant county health officer to succeed Dr. George Collins, Charlotte, resigned.

NORTH DAKOTA

State Health Work to Be Unified.—Under the regime of the new state health department created by the last legislature, efforts will be made to unify health work throughout the state. Dr. Arthur A. Whittemore, Bowman, is the state health officer. North Dakota will seek to qualify for the United States registration area. A convention of all county and city health officers will be called sometime this fall, at which uniform methods for use throughout the state will be worked out.

OHIO

Chiropractors Convicted.—It is reported that Ernest Bovey, John E. Jones and C. E. Stewart were fined $25 and costs, each, at Springfield, August 1, on charges of practicing medicine without a license.

New School Inspection Law.—Under the new school inspection law, every school child within the jurisdiction of the city and county health departments must be weighed and measured, and have his teeth, eyes, ears, nose, throat and heart examined.

Personal.—Dr. Edmund M. Baehr, chief executive physician and psychiatrist of the state bureau of juvenile research, has tendered his resignation, it is reported.——Dr. Georgetta S. Williams, Hamilton, has been appointed a member of the city board of health.——Dr. Harold L. Higgins has been appointed professor of pediatrics at the College of Medicine, University of Cincinnati, to succeed Dr. Kenneth D. Blackfan, who resigned recently to accept a position at the Harvard Medical School, Boston.——Dr. Robert Olesen, U. S. Public Health Service, has been detailed to study the public health aspects of simple goiter. He will make his headquarters at Cincinnati.——Dr. Mason R. Pratt has resigned as superintendent of the Aultman Memorial Hospital, Canton.——Dr. Robert H. Trimble, Mount Sterling, has been appointed to succeed Dr. Franklin D. Postle, London, as health officer of Madison County.——Dr. Matthias A. Wagner, Lima, has recently returned from Europe where he attended pediatric clinics.

OREGON

Personal.—Dr. Herbert C. Eastland has been appointed health officer of Reedsport.——Dr. Walter E. Hempstead, Oregon City, has resigned as county health officer.——Dr. Frank E. Boyden, Pendleton, was elected president of the Eastern Oregon Medical Society at the annual meeting at Wallowa Lake, July 27-28.

PENNSYLVANIA

Bucks County Society Anniversary.—The seventy-fifth anniversary of the Bucks County Medical Society will be held at Doylestown, September 19.

Reading Milk Regulations.—A new feature of the milk regulations of Reading became effective, August 1, when the caps of milk bottles were required to bear the day of the week on which the milk was bottled, in addition to the name and address of the dealer. The ordinance will be enforced the year round, and the penalty for the first offense is a fine of not less than $25. The city consumes about 50,000 quarts of milk a day.

Personal.—Dr. James S. Hammers, Embreeville, has resigned as superintendent of the Chester County Hospital for the Insane to become medical director of the Pittsburgh City Home and Hospital, Mayview.——Dr. Harry T. O'Connor, Pittsburgh, has been appointed county medical director of Allegheny County to succeed Dr. Augustus H. Eggers, Pittsburgh, who resigned recently.——Dr. Thomas A. H. Stites, Alexandria, La., has been appointed medical director of the Pennsylvania State Sanatorium for Tuberculosis, Cresson, succeeding Dr. William G. Turnbull, who has been appointed deputy commissioner of health for the state of Pennsylvania.

Philadelphia

Dr. Ellis Sails for Siam.—Dr. Aller G. Ellis, formerly associate professor of pathology at Jefferson Medical College, has sailed for Bangkok, Siam, where he will take charge of the pathologic department of the Royal Medical College, Bangkok, under the auspices of the Rockefeller Foundation of New York. Dr. Ellis will also occupy a position similar to the dean in an American educational institution.

Personal.—Dr. John I. Fanz, Philadelphia, has been elected professor of pathology, hygiene and bacteriology at the school of medicine of Temple University to fill the vacancy caused by the resignation of Dr. Eugene T. Asnis.——Dr. George E. de Schweinitz, Philadelphia, delivered an address before the Mechlenburg County Medical Society at Charlotte, N. C., August 1.——Dr. Edward B. Krumbhaar, Philadelphia General Hospital, was recently the recipient of the $150 award of the Elizabeth Thompson Science Fund for the study of immunity to cancer.——Dr. Maude E. Abbott, curator of the medical museum and lecturer at McGill University, Montreal, Canada, has accepted the chair of pathology and bacteriology and the supervision of the clinical laboratories of the Women's Medical College of Pennsylvania, Philadelphia. Dr. Abbott is managing editor of the *Descriptive Catalogue of the Canadian Army Medical Museum*, permanent secretary-treasurer of the International Association of Medical Museums, of which she was a founder, and a member of the editorial board of the *Journal of the Canadian Medical Association*.

TEXAS

Epidemic of Typhoid.—According to a report from Dr. William H. Beazley, Austin, state health officer, typhoid fever has reached epidemic form in several sections of Texas. Polluted streams are attributed as the cause.

Personal.—Dr. John Francis McDonald was recently appointed city health officer of Hillsboro.——Dr. Henkle Garst, Pharr, has been appointed director of the division of child hygiene of the state health department.—Dr. Joshua M. Blackwell, Austin, has been appointed to succeed Dr. William H. Sory as health officer of the public health unit at Brenham.

WASHINGTON

Hospital News.—The contract has been awarded for the construction of the Providence Hospital, Everett, at a cost of $300,000. The structure will be erected for the Sisters of the Charity of the House of Providence, and will be four stories high and of brick and concrete construction.——The county commissioners of Pierce County voted last month to establish a nonsalaried staff of physicians at the Pierce County Hospital, Tacoma, which will displace the present office of county physician and his assistant. This action will retire Dr. Clarence P. Gammon, county physician.——The board of directors of the Walla Walla Sanatorium, College Place, announce a reorganization of the medical department of the institution, the appointment of a complete staff, and the establishment of a diagnostic clinic with modern hospital facilities. The newly appointed chiefs of departments are: superintendent, Drs. Adam D. Schlotthauer; internal medicine, Edward L. Whitney; surgery, John C. Lyman; ophthalmology, rhinology, laryngology and otology, James T. Rooks, and radiology, Carl J. Johannesson.

WISCONSIN

Inspection of Summer Resorts.—Under the auspices of the state board of health, sanitary supervisors have given strict attention to the sanitation of summer resorts in Wisconsin. In July, there were 391 hotels inspected and sixty-three orders for improvements; 458 restaurants were also inspected.

Four-Year Medical Course at Wisconsin University.—When the new $1,400,000 state general hospital, now under construction at the University of Wisconsin, Madison, is completed, the university will be able to give a four-year course in medicine. The new hospital will have 300 rooms, twelve large wards and facilities for medical students to serve internships there.

CANADA

Canadian Association of Anesthetists.—The following officers have been elected for the ensuing year: president, Dr. Walter I. Muir, Halifax; vice president, Dr. John J. J. Buettner, Syracuse, N. Y., and secretary-treasurer, Dr. Harry J. Shields, Toronto.

Canadian Physicians in Politics.—More than twenty physicians of Ontario were candidates at the recent elections to the Canadian House of Parliament. The following physicians were the successful candidates: Joseph D. Monteith, Stratford; the Hon. David Jamieson, Durham; Arthur G. Wallis, Algoma; Leeming Carr, East Hamilton; George V. Harcourt, Parry Sound; Forbes E. Godfrey, West York, and John P. Vrooman, Lennox.

Tuberculosis Dispensaries to Be Established in Quebec.—Under the auspices of the board of health, dispensaries for

the treatment of tuberculous patients will be established throughout the province of Quebec in the near future. The dispensaries will be located in hospitals already established, or in other institutions at points where the disease is most prevalent. School dispensaries will be established in Montreal and Quebec, where nurses and physicians will be trained. Later, this part of the scheme will be extended to other parts of the province.

Hospital News.—Bids have been received for the erection of a hospital at Monston, N. B., which will cost $125,000——Construction work has been started on additions to the Brantford General Hospital, Brantford, Ont.——A new isolation hospital will be erected in the near future at Revelstoke, B. C.——A hospital, to be known as the Hotel Dieu de St. Laurent, will be erected at a cost of $600,000 by the Reverend Sisters of Quebec General Hospital, Quebec.——Citizens of Restigouche and Bay of Chaleur counties have raised $150,000 to erect a memorial hospital to the fallen soldiers. Its capacity will be fifty beds.——Construction work has been started on a 125 bed addition to the Grace Hospital, Winnipeg, Manit.——The north wing of the Ste. Anne Hospital for the Insane, Baie St. Paul, Quebec, was completely destroyed by fire recently, involving a loss of $150,000. The 250 male inmates were marched out of the building at 2 o'clock in the morning without loss of life.——The fiftieth anniversary of the St. Jean de Dieu Hospital for the Insane, Quebec, was celebrated recently. The hospital was established by the Sisters of Providence in 1873.——The government of the Province of Quebec has decided to assume control of the Ste. Agathe Sanatorium. At present it is occupied by invalided soldiers cared for by the Dominion government, and it is announced that the institution will be taken over as soon as the present inmates have left.——A new hospital will be erected at Nanaimo, B. C., at a cost of 150,000.

GENERAL

Negro Death Rate.—According to statistics compiled by Howard University, Washington, D. C., the mortality rate among negroes in the United States is seventeen in a 1,000. It is also stated that colored physicians and surgeons have increased 23.7 per cent. during the last ten years.

Incidence of Trachoma in the United States.—At the twentieth annual conference of State and Territorial Health Officers, recently, Dr. John McMullen, secretary of the standing committee on trachoma, in his annual report stated that the general work included twenty-seven clinics in rural communities in Kentucky, Ohio, Texas, Mississippi, Tennessee, North Carolina and Georgia, at which more than 5,000 people were examined, 686 cases discovered and 498 operations performed. In some cases the disease could be traced back four generations.

The "Devil's Grip."—Dr. William C. Fowler, health officer of the District of Columbia, has recently returned from an investigation of the outbreak of "devil's grip" in Virginia. More than 400 cases have already been reported in the state in a district about sixty miles south of Washington. At a special meeting of physicians in the Virginia Academy of Medicine, Richmond, a committee was appointed to make a thorough study of the strange malady and report its findings to the academy. This disease, or one similar, appeared in Virginia in 1888, and was described by a professor in the University of Virginia at that time as the "devil's grip."

New Magazine in Health Field.—The most recent number of *Venereal Disease Information*, a monthly publication issued by the U. S. Public Health Service, primarily for health officers, physicians, nurses and social workers engaged in venereal disease control activities, appeared in print, instead of in mimeograph, as formerly. The publication has been improved. The contents are divided into six sections under the heads of special articles, research, diagnosis, treatment, clinical notes and public health and administrative notes. Subscription rates for this new periodical are 50 cents per year, and it may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C.

Regional Anticancer Drives.—It has been announced by the American Society for the Control of Cancer that, beginning October 15, a series of six regional cancer campaigns, which will not only cover the entire United States, but Canada and the maritime provinces as well, will be given to take the place of the National Cancer Week held in 1921 and 1922. Dr. George A. Soper, now head of the society in place of the late Dr. Charles A. Powers, believes that the work can be more effectively accomplished by the new method. The campaign in the region comprising Wisconsin, Michigan, Illinois, Ohio, Indiana, West Virginia and Kentucky will begin February 15, and continue until March 14, 1924. Preparatory work will occupy three weeks in each region or district, and the fourth week will be devoted to a cancer week in which information will be broadcasted to the public.

Public Health Laws.—More than 200 new health laws have been added to the statute books this year. Sixty-eight of these were in New York. Iowa has twenty-four new health laws; Minnesota, twenty-one; Ohio, thirteen; Connecticut, eleven, and Idaho, ten. Other states each passed less than ten, as in New Jersey, where forty-four measures were considered and only four passed. Forty-one states have now accepted, through legislation, the provisions of the Sheppard-Towner Maternity Act. Of the new health laws of this year, forty concern municipal health, twenty-four concern tuberculosis and nineteen are connected with food and drugs. There were several laws passed on state health, and eight new narcotic acts. Chiropractors got legislation in only two states (Maine and Tennessee), but the cult now has recognition in twenty-five states. All antivivisection and antivaccination bills were defeated.

Glandular Therapy and Body Growth.—The physical records of the graduating classes of 1920-1921 at the U. S. Naval Academy revealed that approximately 10.6 per cent. of each class failed to attain the minimum height for officers of 66 inches. Capt. D. N. Carpenter and Lieut. D. Ferguson of the U. S. Navy attempted to stimulate growth by endocrine therapy. The group of undersized midshipmen submitting to organotherapy was wholly volunteer. The conclusions based on the study were:

1. The new regulations governing the height requirement of candidates for the Naval Academy, namely, 62 inches at 16 years of age and an additional inch for each year or fraction over six months, if rigidly enforced, promise to reduce underheight in officers by almost one half.
2. Growth is not stimulated by thyroid and pituitary therapy in persons at or near maturity.
3. Preparations of anterior pituitary extract appear to be inert as growth stimulants in these men, when administered orally.
4. There is possibly an appreciable percentage of thyropenia in this country.

World's Dairy Congress.—The annual meeting of the World's Dairy Congress Association will open at Washington, D. C., October 2-3. There will be twenty-nine sessions, and delegates from thirty-seven countries will attend. The delegates will spend October 4 at Philadelphia as guests of the National Dairy Council, and from October 5-10 they will hold their meeting in cooperation with the seventeenth annual National Dairy Exposition at Syracuse, N. Y. Among the speakers will be Dr. Costantino Gorini, professor of bacteriology and hygiene, Agricultural High School, Milan, Italy, and at the University of Pavia; Lafayette B. Mendel, Ph.D., physiologic chemist of Yale University, New Haven, Conn., and editor of the *Journal of Biological Chemistry;* Elmer V. McCollum, Ph.D., professor of chemical hygiene, Johns Hopkins University, Baltimore, and Dr. Osakar Laxa, professor and director, Bacteriological Institute, Prague.

Society News.—The thirty-sixth annual meeting of the Medical Society of the Missouri Valley will be held in Omaha, September 18-21 in conjunction with the meeting of the Interstate Society of Radiology and Physiotherapy. The latter is a new organization of which Dr. Charles L. Mullins, Broken Bow, Neb., is president, and Dr. Roland G. Breuer, Lincoln, Neb., secretary.——The annual meeting of the American Electrotherapeutic Association will be held in Atlantic City, N. J., September 18-21.——Dr. Homer D. Dudley, Seattle, was recently elected president of the Pacific Northwest Medical Association for the ensuing year. The association is composed of physicians from British Columbia, Alberta, Washington, Idaho and Montana.——The twenty-seventh annual meeting of the Sioux Valley Medical Association was held in Sioux Falls, S. D., July 5-6. Dr. Louis L. Corcoran, Rock Rapids, Iowa, was elected president, and Dr. Ralph M. Waters, Sioux City, Iowa, secretary.——The first annual convention of the American Child Health Association will be held at Detroit, October 15-17. Health education, nursing and general subjects will be discussed.——The semiannual meeting of the American Association of Hospital Social Workers will be held at Milwaukee, October 29-November 2, in conjunction with the twenty-fifth annual conference of the American Hospital Association. A group meeting will also be held with the American Dietetic Association.

LATIN AMERICA

Baby Clinic in Mexico.—The Young Women's Christian Association will shortly open a daily clinic in Mexico City for the instruction of mothers in the care and feeding of young children. Artificial food will be sold at cost to mothers unable to nurse their babies. The patio of an old convent in a crowded district has been loaned to the association and equipment donated.

Personal.—Dr. E. V. Segura, professor of diseases of the ear, nose and throat at Buenos Aires, has been elected foreign correspondent by the Académie de médecine at Paris.——A subscription list has been opened at Buenos Aires to collect funds for a bronze tablet in memory of Dr. Juan Guglielmetti, and for the publication of some of his most important works. ——The Academia Nacional de Medicina of Brazil recently reelected Dr. Miguel Couto president for the tenth time. Dr. A. de Castro was elected vice president; Drs. Belmiro Valverde, first secretary; Artidonio Pamplona, second secretary, and H. Roxo, Ferreira da Silva and H. Autran, editors of the *Annaes*. The ninety-fourth anniversary of the Academia was celebrated recently.——The *Anales* de la Sociedad Médico-Quirúrgica of Guayaquil mentions the arrival and brief visit of Dr. J. D. Long, assistant surgeon general of the U. S. Public Health Service, on his return from the Pan-American Conference at Santiago de Chile.——Dr. A. J. Valenzuela V. has returned to Guayaquil from a trip to Europe, after serving at the Sixth Latin-American Congress at Havana as the official delegate from Ecuador.

FOREIGN

Improved Health Conditions in Japan.—Baron Masuda and Baron Mitsui have each contributed 200,000 yen to the Keio University, Japan, to establish a food research laboratory in connection with the university hospital with a view to improving the health conditions of the people. This laboratory will be the first of its kind in Japan. Drs. Kenta Omori, head of the research work, and Z. Kawakami will visit the United States and Europe in the near future, under the auspices of the university, to study similar undertakings in those countries.

New Australian Maternity Law.—With the proceeds from the "Golden Casket" lottery (averaging more than $1,000,000 per annum) maternity hospitals, hospitals for diseases of women, antenatal and baby clinics and training schools for nurses in midwifery and infant welfare will be established throughout Queensland under the provisions of a new measure known as the Maternity Act, passed at the last session of the Queensland Parliament. In isolated places cottage maternity hospitals will be erected. Sums varying between £2,500 and £10,000 will be set aside for the provision of adequate institutional accommodation in the ten largest centers in Queensland. No persons, under this act, shall be refused admission to these maternity hospitals because they cannot pay the fees or "on account of any other cause."

Measles Convalescents' Serum in Prophylaxis.—The *Klinische Wochenschrift* of Berlin relates that the public health authorities of Germany have been discussing provision of measles convalescents' serum for preventive purposes for children under 4 years of age. The plan of having some arrangement by which the public health authorities in large towns could have a supply of the serum was endorsed, and propaganda through the medical press and daily papers was advocated, to interest physicians and parents in the matter. Practitioners were urged to refer to hospitals children above the age of 4 who might be considered as donors, and instruct the children themselves, as well as the parents, in the danger to the younger children without the preventive injection. All interested in the technic for obtaining the serum and its clinical application were referred to recent articles by Degkwitz. Two were summarized briefly in THE JOURNAL, July 31, 1920, p. 356, and May 13, 1922, p. 1501.

International Surgical Congress.—At the congress recently held in London, Dr. Davide Giordano, Venice, Italy, was elected president to succeed Sir William Macewen. The predecessors of Giordano in the presidency of these congresses were: Kocher of Berne; Czerny of Heidelberg; Lucas Championnière of Paris; Depage of Brussels; Keen of Philadelphia, and Macewen of London. The *Riforma Medica* states that Giordano is the first president who is not connected with a university. The toast to the delegates at the annual banquet was acknowledged by Dr. Crile, for the U. S.; Dr. Koch, for Holland; Dr. Mayer, for France and Belgium; Dr. Alessandri, for Italy; Dr. Hansen, for Denmark; Dr. Kayser, for Sweden; Dr. Petridis, for Egypt; Dr. De Zawadski, for Poland, and Dr. de Quervain, for Switzerland. The next congress will be held in Rome and not in Warsaw as had been proposed.

School Medical Inspection Abroad.—Legal provision for school medical inspection in foreign countries is as follows:

Austria.—The state organized medical inspection and the medical inspectors are appointed by central authorities.

Belgium.—The general lines along which medical inspection of those schools coming under the provision of the law should be carried out are specified by royal decree, March 25, 1921, in conformity with article 45 of the Organic Elementary Education Law.

England.—The Education Act of 1907 requires the local education authorities to provide for the medical inspection of school children when they enter a public elementary school and as often thereafter as the board of education may determine.

France.—The law of Oct. 30, 1886, dealing with the organization of elementary education, provides for the medical inspection of private or elementary schools by communal or departmental medical inspectors.

Germany.—School medical inspection is carried on under special enactment in several confederate states.

Hungary.—The law of April 8, 1876, places the sanitary problems of school under the supervision of municipal authority, subject to the direction and control of administrative authorities through their medical officer and special officials.

Norway—School medical inspection is carried on under the education law of 1896.

Roumania—The law of June 14, 1893, charges town physicians with the medical inspection of schools

Scotland.—By the Education Act of 1908, every school committee when called on by the education department is required to provide for school medical inspection in accordance with departmental directions.

Switzerland.—School medical inspection is carried on in several cantons under legal provision.

Health Conditions in Various Countries.—Rangoon, in 1920, had an infant mortality of 303, Calcutta, of 386 and Bombay, of 556 per thousand born, the incredible figures of 995.6 and 900.5 deaths per thousand being given for certain parts of the last mentioned city. Of 19,731 births registered in Bombay, 1920, 14,956 occurred in single room tenements with a mortality of 631 per thousand.——In Uganda, Africa, according to statistics, quoted by the *China Medical Journal* (June), 33 per cent. of infants die at birth; with the addition of miscarriages, and deaths during the first week, the infant mortality rate reaches 70 per cent. During the last six years, Uganda has had 64,000 more deaths than births.——Siam, according to a recent survey, has 8,000 lepers.——Brazil, according to official statistics for the federal district quoted by the *Brazil-Medico*, has 714 lepers interned at hospitals or under domiciliary supervision.——Argentina, according to *Néoplasmes* (June), had 9,400 deaths from cancer in Buenos Aires alone, from 1912 to 1918, or 10 for each 10,000 inhabitants.——Brazil had 2,790 deaths from cancer in Rio de Janeiro, from 1912 to 1918, with a death rate of 5.09 per 10,000 from this disease in 1921. The state of S. Paulo reported 798 deaths from cancer in 1918.——Japan reported 192,530 deaths from cancer (70.8 per 10,000 male, and 69.2 per 10,000 female inhabitants) from 1914 to 1918.

Plans of American Medical Aid in Russia.—Plans for the medical work of the Friends' Relief Mission in Russia have been announced. This work is supported by the American Friends' Service Committee, Philadelphia, through its medical section, American Medical Aid for Russia. The first part of the program is to provide hospitals with sheets, blankets, medicines and other necessities. Many of the hospitals in the district have had only a small amount of medicine, and almost none of the most essential equipment, such as thermometers, hot water bags and instruments. The second part of the program is to continue the antimalaria work. There are now two clinics, one in Sorochinskoye and one in Buzuluk, each of which has received more than 7,000 persons for quinin treatment, and each of which is taking about 100 new patients a day. A general sanitary survey of most of the villages will be made, followed by a health campaign. The third feature is child welfare work. As a first step, the government will reduce the number of children in charity homes to a minimum, so that efforts may be concentrated on keeping the general population in health. Day nurseries will be opened in villages during the summer, that young children may be cared for while their mothers work in the fields. Where necessary food relief will be given to widows with more than one child. Better medical inspection of institutions and schools will be necessary, for which additional Russian physicians will be brought in by the mission, or local physicians procured. Summer homes for defective children will be opened. The final point in the program will be a campaign against venereal disease following a special appeal from the government for help in this connection due to the

alarming increase since 1914. This program has the full approval of the health department of the Russian government. Dr. Elfie R. Graff, Poughkeepsie, N. Y., is in charge of the work.

Personal.—M. Strauss, minister of Hygiene in France, presided July 9 at the unveiling of the tablet in memory of Professor Chantemesse at the house where he was born at Puy.——Professor Tiffeneau of the department of pharmacology, Paris, has been awarded the Jecker prize by the Académie des sciences.——Professor Delepine of the department of pharmacology, Paris, has received the international Cannizzaro prize in chemistry from the Italian Academia de Lincei at Rome.——Drs. Widal and Sicard, and M. Mourier, director of the Assistance publique, delivered addresses at the ceremony of naming a ward of the Necker Hospital, Paris, in memory of Dr. Hirtz, who for many years was physician to that hospital.——Dr. Henry Reynès, professor of surgical pathology at Bordeaux, founder and president of the Association professionelle des médecins et chirurgiens of the civilian hospitals of France, director of the journal *Les Hôpitaux de France*, has been appointed to the council of the Assistance publique.——Sir Thomas Oliver of England, specialist in occupational diseases, will visit the United States in September to ascertain the progress made in industrial hygiene and employees' welfare work since 1912, when he made a similar tour.——Col. Charles H. Bowle-Evans has been appointed director of medical services of the British Army in India, to succeed Lieut. Gen. Sir Charles H. Burtchaell.——Surgeon Rear Admiral Joseph Chambers will, October 1, succeed Surgeon Vice Admiral Sir Robert Hill as director general of the medical department of the Royal Navy. ——The honorary degree of LL.D. was conferred on Sir John Bland-Sutton, President of the Royal College of Surgeons of England at the installation ceremonies of Mr. Rudyard Kipling as Rector of the University of St. Andrews, Scotland. ——Dr. Emerich v. Gergö has been elected president of the newly organized Hungarian Roentgen Society. Dr. A. Henszelmann is vice president, and Dr. Vidor Revesz, secretary, all of Budapest.——The *Medicina Ibera* mentions that a traveling fellowship has been given Dr. Abelardo Serrada of Madrid for studying the treatment of gastric cancer in other countries. He is now in Paris.——Dr. José M. Jorge, professor of clinical and orthopedic surgery at the University of Buenos Aires, has been sent by the medical faculty on a special mission to Europe to study orthopedic institutions.

Deaths in Other Countries

Dr. **George E. Miles,** superintendent of the lunacy department of New South Wales and veteran of the World War; at Sydney, Australia, June 11.——Dr. **Harry Shore** of Walsall, England, in a motor bicycle accident, recently.—— Dr. **William F. Robertson,** pathologist to the Scottish asylums; author of "Textbook of Pathology in Relation to Mental Diseases," and translator of Tanzi's "Textbook of Mental Diseases"; July 17, aged 56.——Dr. **Heinrich Bircher,** chief of the Aarau Hospital, one of the leading surgeons of Switzerland, author of works on the thyroid and on war surgery, aged 73.——Dr. **A. Ellinger,** professor of pharmacology at the University of Frankfort, aged 53.——Dr. **E. Hess Bey,** at Zurich, a Swiss physician, long practicing in Cairo, aged 75.——Dr. **Delépine,** Lille.——Dr. **Demetrio Murúa Pérez,** chief of the public disinfection service of Valparaiso, Chile, and on the staff of the San Augustin Hospital. ——Dr. **E. G. Müller,** professor of histology and anatomy at Stockholm, and president of the Swedish Medical Association, 1915-1916.——Dr. **J. Dallemagne,** formerly professor of legal medicine at the University of Brussels, and pioneer in Belgium in the application of modern psychiatry to criminals.—— Dr. **Mario Bastos Rodríguez,** a radiotherapeutist on the staff of the Hospital Rivadavia, Buenos Aires.——Dr. **Juan Antonio Agrelo,** a young physician of Buenos Aires.——Dr. **M. Wolff,** professor emeritus of internal medicine at the University of Berlin, aged 80.——Dr. **J. Forschbach,** professor of internal medicine at the University of Berlin, aged 45.——The *Brazil Medico* mentions the death of Dr. **Henrique Araujo,** professor in the law school at Nictheroy and author of works on preventive medicine, and also the death of Dr. **Camillo Fonseca** of Rio de Janeiro.

CORRECTION

Dr. Cohen Awarded Knapp Medal.—In the report of the Section on Ophthalmology of the American Medical Association, THE JOURNAL, July 14, p. 126, it was stated that the Knapp Medal was awarded to Dr. Martin Cullen, New York. It should have read Dr. Martin Cohen, New York.

Government Services

Court Martial Ordered

It is reported that court martial proceedings have been ordered against Major George W. Cook and Capt. Samuel C. Gwynne, Medical Corps, U. S. Army, following an investigation by the Surgeon General and the Inspector General of the treatment of Private Guy Pendleton whose legs were amputated while in hospital at Camp Eustis, Va. Major Cook was in charge of the hospital at the time of the operation.

Advisory Committee of Public Health Service Meets

August 15, a conference of the advisory committee to the Surgeon General on the education of sanitarians and the future of the Public Health Service in the United States, was held in Washington, D. C. The activities of the Public Health Service to insure a larger number of trained sanitarians for the future and to discover how those now employed might receive further academic training were reviewed by the advisory committee, at this meeting. In attendance were Dr. David L. Edsall, chairman; Dr. H. S. Cummins, head of the U. S. Public Health Service; Dr. Haven Emerson, professor of public health administration, Columbia University, New York; Dr. Frederick W. Sears, sanitary supervisor, New York State Department of Health; Dr. W. S. Rankin, state secretary, Board of Health of North Carolina; Surg. A. J. McLaughlin, U. S. Public Health Service; Dr. W. F. Draper, Asst. Surgeon General, U. S. Public Health Service, and Mr. H. H. Moore, director of public health education of the U. S. Public Health Service. Particular attention was given to replies from questionnaires sent to 3,700 employees of health departments, 6,300 public health nurses and to 10,000 physicians in five states in various parts of the country.

Among 6,123 replies, more than 5,700 asserted that there is need for public health institutes of six to eight weeks' duration, to be established in connection with existing university centers. The majority preferred that the institutes be held in the summer. The committee will suggest to the Public Health Service that a limited number of universities be requested to establish public health summer schools in 1924, and that the service assist in this work. The aim of these schools of public health, such as are proposed, would be to provide intensive training for all professional groups engaged in public health work; to make available to practicing physicians instruction which would enable them to participate more fully in preventive work; to treat more effectively cases referred to them by school clinics, and to bring together in a more cooperative relationship practicing physicians, health officers and sanitarians.

The following groups, it is proposed, might be eligible for admission: physicians; nurses; employees of health departments or recognized private agencies, recommended by the heads of such departments or agencies, and students of universities who present a statement from the president or dean that they are competent to do advanced work.

It is probable that the Public Health Service will propose to four or five universities of the country the establishment of these public health summer schools so that at each one a program of courses would be available, with a number of specialists of eminent reputation for each of the faculties. A suggested course of subjects to be covered would be tuberculosis, nutrition, public health nursing, child hygiene, syphilis, gonorrhea, diseases of the heart and arteries and the noncommunicable diseases (including diabetes and cancer). In addition, laboratories should be available for work in bacteriology, epidemiology and immunology. The experience of the Public Health Service in conducting venereal disease institutes in 1920 indicates that the success of the proposed summer schools will rest largely on the skill of the instructors to make their subjects interesting, and on their nation-wide reputation. Physicians will travel long distances to secure instruction from recognized authorities.

Present Status of Reserve Corps Units

The Surgeon General of the Army believes that the medical profession will be interested in a statement of the present status of organization of reserve corps units of the Army. The difficulties attending the organization of staff departments for an army of three million men make desirable the necessity

for an organization or superstructure in peace time from which effective military units could be quickly built in time of emergency.

The complete lack of organization of the civil profession for the stupendous expansion required by the World War resulted necessarily in defects and inequities in many instances. The purpose of the War Department is now to effect an organization of the medical profession which will provide a more effective medical department organization for the next public emergency. No one knows better than the Surgeon General of the Army that the lack of a personnel organization prior to the World War resulted in individual injustices and errors in assignment. These defects all point to one remedy, which is prewar preparedness, along which path the medical department is now proceeding. Success can be obtained only by the cooperation of the medical profession, whose interests are fundamentally great in perfecting such organization. Broadly speaking, the endeavor of the medical department is along three lines, military education, military enrolment and military organization.

Military education is cared for by the R. O. T. C. units which are established in a considerable percentage of the recognized professional schools of this country, and also by the training of reserve officers in the military schools and training camps of the Army. Enrolment is fundamentally the acceptance of a commission in the National Guard or Officers' Reserve Corps. Organization is effected by assigning enrolled personnel to potential military units of the National Guard and Organized Reserves. In the medical department, these units fall broadly into two groups which may be described as tactical units pertaining to combatant forces, and hospital and supply units pertaining, in a broad sense, to the service of supply and hospitalization.

At the present, the enrolment of commissioned personnel of the medical department is as follows:

	Medical	Dental	Veterinary	Medical Administrative	Sanitary
Reserve Corps.....	6,478	3,267	640	662	334
National Guard....	628	171	79	51	...

In relation to the total medical profession of America, this enrolment is not satisfactory. The failure to secure a larger enrolment is probably due mainly to three factors: (1) A national apathy toward preparedness for war in peace time; (2) the natural reaction immediately after a war toward things military, and (3) the sense of inequity or injustice which occurred in many individual instances.

The medical department is earnestly seeking by fair and impartial treatment of all to win the confidence of the profession and to overcome ill feeling toward the service. It is believed that the pendulum has begun to swing the other way and that before long a much more satisfactory enrolment in the medical department will be secured.

The present state of the organization of units is, of course, affected by the relatively low enrolment in the Officers' Reserve Corps. The War Department divides units into two large groups, which are called the branch assignment group and the territorial assignment group. Continental United States is divided into nine territorial areas, to each of which is allocated the organization of certain units. The organization of the territorial group units is progressing steadily, along with the organization of the tactical units of the line and other staff departments in these areas.

In a general way, the purpose of this office is to organize suitable hospital units, specialists groups, supply units and other Medical Department units in leading universities, hospitals, supply centers and business organizations of civil communities. In the selection of personnel for these organizations, the utmost freedom is left to the university, hospital or business organization which is delegated to provide the unit. It is not expected that this organization will strip the parent organization of the university, hospital or other organizing factor of its essential staff. On the contrary, the purpose is to have an organization selected which will enable the parent staff to continue its operations without difficulty. A complete organization is not necessary in the formation of hospital units. The enrolment of enlisted personnel and nurses is not required, nor is any uniform or other equipment necessary. The university or hospital nominates the commander, who must receive the approval of the War Department; other members of his staff are nominated and approved from time to time as suitable persons are found by the organizing personnel of the unit.

The medical profession of America met the need of the country in the World War in a most wonderful manner. It is now called on to meet the requirement of the country for national preparedness.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 4, 1923

Cancer Research

At the annual meeting of the Imperial Cancer Research Fund, the director, Dr. J. A. Murray, presented his report on the results of the investigations of various workers under the fund. Dr. Cramer's work on vitamin deficiency had been brought to a conclusion. Repeated experiments had failed to show any inhibitory effect on cancer even when deficiency of vitamins was so severe as to be incompatible with life. Dr. Drew's tissue culture work has added considerably to our knowledge both of normal and of cancer cell life. He showed that differentiation is absent in cultures of normal tissues when the parenchyma cells are grown without connective tissue. But the addition of a pure culture of connective tissue to one of kidney epithelium or squamous epithelium is quickly followed by differentiation, convoluted tubes with swollen bulblike extremities being produced. Similarly, when the undifferentiated mammary carcinoma of the mouse is grown with connective tissue, typical adenomatous structure is produced. When the connective tissue is removed, the undifferentiated condition returns. Drew concludes that the loss of differentiation, which has played so large a part in the theoretical discussion of cancer, is merely a superficial character. In another set of experiments, Drew threw some light on the nature of malignant transformation. It is known that while embryonic tissues and tumors grow without delay when placed in a suitable culture medium, adult tissues grow only after a considerable time. If an extract of minced kidney, which has been incubated with the fluid used for extraction for one or two hours, is added to the culture medium, growth begins at once; but without incubation the delay is as long as if the addition had not been made. When a similar extract is made from a rapidly growing transplantable tumor, growth is as energetic as with incubated kidney. These experiments seem to suggest that malignant cells produce growth-activating substances which normal tissues produce only in response to injury. This helps to explain the part of chronic irritation in cancrogenesis. The irritants which lead to cancer are relatively mild and do not cause rapid destruction. The sudden onset of malignancy after a long period of irritation seems to be due to change in the protoplasm by which activating substances are produced.

Eleventh International Congress of Physiology

The eleventh International Congress of Physiology has been held in Edinburgh under the presidency of Sir Edward Schäfer. In his address he especially associated the name of Lister with the gathering, partly because he was for several years professor of surgery in the university, but chiefly because the researches that preceded his great discovery were researches in pure physiology, and were inspired by that great teacher William Sharpey, who migrated in 1836 from Edinburgh to London. Incidentally, it was interesting that both Sharpey and Harvey—the greatest of British physiologists—were born in the same town, Folkestone, though at an interval of 200 years. The honorary degree of Doctor of Laws was conferred on F. Bottazzi, Naples; W. Einthoven, Leyden; W. H. Howell, Baltimore; J. E. Johansson, Stockholm; A. Kossel, Heidelberg; H. H. Meyer, Vienna; Ivan Pawlow, Petrograd, and C. Richet, Paris. Prof. J. J. R. Macleod read an exhaustive paper on insulin. Professor Richet, in a paper which he termed revolutionary, dealt with the borderland of physiology and psychology, endeavoring to prove by the experimental

method that there were other channels than the normal sensory ones. It was generally thought that we could not comprehend reality by other means than the five senses. He suggested that the events of the external world could actuate us in some other way which was not at present understood, by a hidden form of sensibility which he termed "cryptesthesia." In considering such possibilities, investigators should not let themselves be prejudiced by the credulity of the spiritualist. The facts, which depended on observation, should be investigated experimentally. Pawlow read a paper on inhibition, dealing with the conditioned reflexes. He raised the important question whether the highest nervous activity—that is to say, individual perfection—might be of use to the next generation. Was it hereditary? He had tried to answer the question by experiments on white mice. He established in them the conditioned food reflexes, using the sound of an electric bell. With the first set of wild white mice it was necessary to repeat the combination of ringing the bell and feeding 300 times in order to establish the reflex. The next generation formed the reflex after 100 repetitions, the third after three, the fourth after ten, and the fifth after five.

Fellowship in the Royal Society and Clinical Research

In a letter to the *Times*, Sir Berkeley Moynihan claims that clinical research and toilsome discoveries of new technical methods are as fully entitled to the term "scientific" as any of the good work done in laboratories. The complexities of clinical research are so intricate, and, because of the human material on which they are conducted, are so bewildering, as perhaps to surpass all forms of laboratory research in difficulty. They call for qualities of insight, imagination, patience and intellectual integrity to a no less considerable degree. The practice of clinical medicine and surgery makes a further heavy demand on the qualities of temperament and character which are little exercised in the cloistered tranquillity of the laboratory. Yet, according to Sir Berkeley, the rewards open to the clinical investigator by the only scientific body competent to give them, the Royal Society, are consistently withheld. The present president of the society is a medical man whose life has been spent in the laboratory, with the result that physiology and general medicine have been enriched by his labors. But there are physicians and surgeons whose lives have been spent in the wards and operation theaters whose contributions to "scientific" medicine are entitled to rank even with his. To this it might be rejoined that the very few clinicians whose work might be compared in value with that of Sherrington have received the F.R.S. Sir Berkeley Moynihan's letter seems to be based on a misapprehension of the reason for which the F.R.S. is conferred—outstanding original contributions to science. On this point most of the admirable qualities which he describes are irrelevant. At the top of the medical profession are very able men, keen diagnosticians, skilful operators, able expositors and excellent observers. It is only by the last—original observation—that a clinician could qualify for the distinction of F.R.S. But original observations, and even important ones, are constantly being made by many clinicians and certainly deserve the adjective "scientific." However, the Royal Society confers its fellowship, here as elsewhere, only on those who have done original work of the highest importance. After all, medicine is far from being an exact science, and it is not difficult and allows scope for a great deal of important work which is far from scientific in the highest sense. Moreover, there are many good workers in the exact sciences whose work, to say the least, is scientifically on a level with those whom Sir Berkeley describes, and they do not receive the F.R.S. for exactly the same reason: their work is not of first class scientific importance. No doubt the work of the leaders of the medical profession for the relief of human suffering can be claimed to be more useful than theirs, but utility is irrelevant to the question. Moreover, medical workers obtain social distinction, which minor scientists do not, and these are the fitting reward for the qualities described.

The Smallpox Epidemic

The Gloucester epidemic has begun to decline, thanks to the energetic measures of the ministry of health. To those who disbelieve in vaccination the following figures should give pause: total admissions to the Gloucester Smallpox Hospital, 350; unvaccinated, 319; vaccinated so long ago as to be unprotected, eighteen; vaccinated during incubation period, thirteen. During the past week, two fresh cases have been admitted, compared with seventy in the previous week. There are now 104 cases in hospital.

Seamen and Venereal Disease

A bill is being passed through the House of Commons to prevent concealment and neglect of treatment of venereal disease among seamen. Under the existing law a seaman suffering from venereal disease at a foreign port has his pay stopped and must pay for his treatment in a hospital and later find his way home at his own expense. The bill provides for free treatment and conveyance home of distressed British seamen suffering from venereal disease. The cost is to be collected from the ship owners, as in the case of any other disease or accident.

The Work of the Ministry of Health: Vital Statistics

In the House of Commons Mr. Neville Chamberlain, minister of health, made an important statement on the work of his department. Among the insured population in 1922, 19,500,000 weeks were lost by sickness. The vital statistics were encouraging, especially considering the exceptionally hard conditions of the last three or four years. The death rate in the first ten years of the century was 15.4 per thousand; in the next ten it fell to 14.3, and last year it was 12.8. In the five years from 1910 to 1915 the infant mortality rate was 111 per thousand births; in the next five, 90; in 1921 it was 83; in 1922, 77. A baby born today could expect to live twelve years longer than its grandfather lived. Many thought that the most fatal diseases were tuberculosis and cancer; but respiratory diseases, such as pneumonia and bronchitis, came first. This high mortality was to be attributed to the congested conditions and polluted atmosphere of the large towns. He hoped to introduce legislation to help the campaign for the cleansing of the atmosphere. Next in fatal effect were diseases of the heart, and third, those of the nervous system. Cancer now caused ninety-six per thousand of all deaths and there was no doubt that deaths from it were increasing. In 1900 the rate per million of population was 829; ten years later, 967, and in 1921, 1,215. The figures were very disquieting, despite allowance for better diagnosis and the fact that more people reached the "cancer age." The position with regard to tuberculosis was more encouraging. The deaths per million last year were only 855, as compared with 2,653 in 1867. Venereal disease was fairly rapidly on the decline, a fact which he attributed largely to the setting up of clinics. There were now 191, and he hoped to increase them. Referring again to infant mortality, the satisfactory figure of 77 per thousand for 1922 still meant the death of 60,000 infants under one year. Besides the saving of life, there was an improvement in the general health of children. He ascribed this in great measure to the establishment of infant welfare centers, of which there were now 1,950. There was need, however, for more centers, more prenatal clinics, more free medical attendances, more health visitors, and improved practice of midwifery. Results already achieved proved that the expenditure of more money in these directions would be well worth while.

PARIS

(From Our Regular Correspondent)

July 27, 1923.

Transfers of Practice

French jurisprudence has always refused to recognize contracts covering the transfer of practice, it being held that the practice of a physician, based mainly on the confidence of the patients in their physician which presupposes the freedom of choice, cannot be the subject of a commercial transaction. But a recent decision of the Court of Appeals of Paris establishes that a physician is entitled to contract with a confrère with respect to "obligations to do or not to do certain things." For instance, he may agree to present a successor to his clientele, to cede to him his leasehold, or to sell him professional equipment, or he may agree not to practice medicine for a given period of time or within a given radius. Such obligations are enforceable under the law and must be respected by the physician who entered into them, even though the agreement should be improperly referred to by the parties to the contract as a transfer of practice.

Again, the ruling quoted shows that lack of success on the part of the physician who took over the clientele cannot be pleaded as a valid reason for annulling the contract. Such lack of success may be due to manifold causes, often of a personal nature; and may be entirely the fault of the grantee.

Unwholesome Propaganda

Dr. Cazeneuve has called the attention of the Academy of Medicine to an advertising poster displayed in most of the omnibuses and street-cars, which, through the illustration and the tone of its language, tends to discredit breast feeding in favor of artificial feeding of infants. Since breast feeding constitutes the main safeguard of the new-born, Cazeneuve has requested the academy to pass a resolution recommending that all forms of propaganda discrediting breast feeding shall be prohibited by law. Pinard requested that the academy take advantage of the opportunity to pass a resolution favoring the bill that he has filed with the chamber of deputies looking toward the prohibition of the sale of "pacifiers" for infants.

The Immense Profits of Certain Branches of the Alcohol Industry

A banking house that is "promoting" the sale of stock of a company manufacturing fine liquors and so-called hygienic wines gives interesting inside information on certain branches of the alcohol industry. It would seem that the distilling industry in general, and, more particularly, the manufacture and sale of liqueurs, has always been a prosperous investment. The bank gives some conclusive illustrations: a certain liqueur paid every year a dividend in excess of the capital stock; namely, 700 francs on shares of 500 francs; a certain "wine of cinchona" yielded 10 per cent. on 100 franc shares. Veritable fortunes are thus being made from the exploitation of "fine" alcoholic beverages.

Court Decision to the Effect That a Hotel Keeper Has Not the Right to Refuse to Admit a Physician to His Establishment

A curious action has recently been decided by the civil tribunal of Nice. The case concerned a physician who had been called to treat certain foreign guests occupying rooms in a hotel in Nice. The proprietor refused to allow the physician to enter his establishment. The physician made three successive attempts to respond to the appeal of those who requested his aid, but was denied entrance each time. The physician accordingly instituted an action for the recovery of damages against the proprietor of the hotel. The hotel proprietor, in turn, filed a counterclaim for damages which he alleged the physician had caused him by using his influence with his clients to induce them to leave his hotel and take up their quarters in another establishment in which the physician was financially interested. The court, however, did not sustain the validity of the hotel keeper's attempted justification of his conduct in refusing to admit the physician to his hotel:

> Under no circumstances, may a physician be prevented from rendering aid to a patient. A person who takes up his residence in a hotel has the right to the tranquil possession of the lodging he has engaged, in accordance with the conditions established by local usage. The proprietor of a hotel has no right to restrict arbitrarily such usage.

The hotel keeper was sentenced to pay the physician 100 francs in settlement of damages, and also the cost of the suit.

Subscription to Establish Memorial for Delage

An international subscription has been opened to secure funds for the erection of a monument at Roscoff in memory of Dr. Yves Delage, under the auspices of M. Léon Bérard, minister of public instruction; M. Paul Appell, rector of the University of Paris; M. Picard and M. Lacroix, perpetual secretaries of the Academy of Sciences, together with numerous men of science and learning. Delage was a professor at the Sorbonne, and director of the biologic station at Roscoff.

Honorary Doctorates Granted by the University of Strasbourg

The University of Strasbourg, in accordance with the recommendation of the assembly of the medical department, has conferred the title of doctor *honoris causa* on Drs. William Maddock Bayliss and Ernest Henry Starling, professors in the University College of London; John Newport Lengley, professor in the University of Cambridge; Simon Flexner and Jacques Loeb, members of the Rockefeller Foundation; William H. Welch, director of the school of hygiene and public health at Baltimore; Edward L. Ehlers, professor at the University of Copenhagen; Jules J. B. Bordet, professor at the University of Brussels; Edoardo Perroncito, professor at the University of Turin, and Santiago Ramon y Cajal, professor at the University of Madrid.

A Reform in Favor of the Medical Personnel of Hospitals

A recent decision of the superior council of the Assistance publique regulates satisfactorily the question of the risks incurred by the medical personnel of hospitals in the exercise of their duties (The Journal, April 7, 1923, p. 1017). Physicians, surgeons, specialists, roentgenographers, interns and externs will henceforth have the right to free hospital care and treatment in case they contract disease or suffer injuries ascribable to their hospital service. A system of direct or mutual combined health and life insurance will make it possible to allow them an indemnity if they remain incapacitated or will indemnify their heirs and assigns if they lose their lives in the line of duty.

Death of Dr. Alexander Marmorek

The death of Alexander Marmorek has been announced. Being an Austrian subject, Marmorek was obliged, at the outbreak of the war, to leave Paris, where he had been a collaborator at the Pasteur Institute.

Fifth Congress in the Interest of Hospital Interns

The fifth congress in the interest of hospital interns was recently held at Lille under the chairmanship of Professor Le Fort of Lille. Among the questions that came up for discussion, one of the most important was that of the protection of interns and, in a general way, of all the medical personnel in case of disease or accident arising in line of duty. Provisions have been adopted recently, with this purpose in

view, by the Assistance publique in Paris, but it remains for these measures to be applied to all the hospitals of the country.

Dr. Bonnefous of Toulouse presented a plan of compulsory internship applicable to all students of medicine, but his plan was not approved by the congress. The majority of the members present remained loyal to the present system of selecting interns on the basis of competitive examinations and after a special period served in the capacity of extern, which appointment is also obtained through competitive examination.

The congress adopted a resolution demanding that provisions be made with a view to allowing all interns who finish their studies to spend a period of three months in the service of their choice. Attendants at the congress expressed unanimously the desire to have the cross of the Legion of Honor bestowed posthumously on Turano, the intern of Algiers who lost his life recently while on duty. It was decided that henceforth the congress in the interest of interns shall be held in the same city and at the same time as the Congress of Medicine.

In Honor of Pasteur

The Paris branch of the Franco-Mexican Association has presented to the Pasteur Institute a replica of the medallion likeness of Pasteur that was hung on the walls of the department of medicine of the University of Mexico on the occasion of the centennial celebration. The bestowal of this work of art took place in the crypt of the institute, at the entrance to the tomb of Pasteur, the presentation speech being given by M. Honnorat, former minister and honorary president of the French section of the Franco-Mexican Association. Dr. Roux, director of the Pasteur Institute, expressed his thanks to the association for the gift and the honor accorded to the memory of Pasteur.

BERLIN

(From Our Regular Correspondent)

July 21, 1923.

Experiences with Insulin

Insulin, which, starting with the University of Toronto, Canada, has quickly made a name for itself throughout the world, has been tested for some time in Germany, as mentioned briefly in my preceding letter. Until recently, no reports of the results secured had been published. A few days ago, Professor Umber, an authority on metabolism and director of the Westend Hospital in Charlottenburg (Berlin), gave an address on insulin before the Berlin Medizinische Gesellschaft. He agreed with observers in America, England, Denmark and Austria that injection of insulin reduces the sugar content of the blood and the excretion of sugar, and that it increases sugar combustion. He emphasized the fact that the remedy does not effect a cure of diabetes, since the excretion of sugar begins again as soon as the injections are stopped. Its chief importance lies in the immediate help it gives in coma and in cases in which surgical intervention becomes necessary. Umber reported also the interesting fact that, shortly before the war, Zuelzer of Berlin, whose investigations on hormones and, more particularly, hormone therapy have attracted considerable attention, discovered a substance that was found to exert an influence on the excretion of sugar. But as the by-effects of the experiments were rather marked, his researches were discontinued, although the war, which called Zuelzer from his laboratory to the battle front, no doubt also exerted an influence on his decision.

In the course of the discussion, Kraus called attention to the fact that experiments are being made in Germany to derive the substance from onions. An assistant of Umber also stated that a preparation had been produced from yeast, the effect of which is identical with that of insulin.

In the current number of the *Deutsche medizinische Wochenschrift*, Biedl, director of the institute for experimental pathology in Prague and one of the pioneers in the field of internal secretions, has published a noteworthy article on insulin. In his opinion, the action of insulin will throw light on and possibly decide the mooted question whether the pancreatic secretion is conveyed to the blood or to the lymph. His experiments lead him to believe that it is carried to the lymph, and he thinks that it has been adequately demonstrated that the active substance contained in the islands of Langerhans is produced intra vitam. He plans to continue his experiments on the hormone content of the lymph of the pancreatic duct. Furthermore, it seems to Biedl that experience with insulin has decided another question; namely, whether in diabetes a diminished utilization of sugar occurs or whether an increased formation of sugar takes place. Biedl thinks that the action of insulin supports the latter assumption. If this assumption could be definitely proved, it would have not only great theoretical value but also a marked practical significance; for, as he points out, restriction of the calory intake, more particularly of the proteins, which have been shown to exert the greatest influence, has brought about a fundamental change in diabetes therapy. In view of this fact, he warns against regarding insulin mainly as a substance that will whip up the alleged slow or reduced combustion of carbohydrates, and thus overlooking the fact that the curative value of insulin lies doubtless rather in the diminution of sugar production, which, owing to pathologic causes, has been going on unchecked.

School for Health Culture

In collaboration with the Augusta Victoria House, which is a federal institution for combating the high mortality among infants and young children, the merger formed of all societies carrying on state-wide activities in the field of social hygiene has established a school for the propagation of health culture. Its main purpose will be to train public welfare workers who will serve wherever they may be needed, but more particularly in the rural sections. In this training the main emphasis will be placed on those features that are of practical importance and are most widely needed. Furthermore, the school will endeavor to meet the general demand for short training and continuation courses for nurses, welfare workers, deaconesses and administrators in social welfare. This school, which will be called the *Gesundheitsfürsorgeschule*, will offer therefore two main courses: (1) an eighteen months' course in health culture, to be followed by six months supervised practical work. Graduates from this two-year course will receive a state diploma, and, as far as possible, will receive state recognition by way of employment or otherwise; and (2) training and continuation courses in the various branches of health culture and welfare work in general. The general public will also be admitted to lectures on theoretical subjects.

Death of Professor Wiedersheim

Prof. Dr. Robert Wiedersheim, who for many years occupied a chair in anatomy and was director of the anatomic institute at the University of Freiburg, has died at the age of 75. Wiedersheim's reputation was based mainly on his textbook on the comparative anatomy of vertebrates, and his valuable work on anatomy and the theory of evolution, "Bau des Menschen als Zeugnis für seine Vergangenheit." He was, however, not only an eminent anatomist but also a very capable and inspiring teacher. A few years ago he published a volume of "Reminiscences," which contains many interesting references to men who have been eminent in medicine during recent decades, and throws many sidelights on the study of medicine during the generation just past.

Death of Professor George Meyer

After a long period of suffering, Prof. Dr. George Meyer, who has won well deserved recognition for his work in the organization of the emergency and ambulance services in our large cities, has died at the age of 64. When, at the close of the last century, the emergency service of Berlin was organized under the energetic supervision of Ernst von Bergmann, Meyer became the medical director of the Aerzteverein des Berliner Rettungswesens, which post he retained until in 1914 the emergency service was taken over by the municipal government. During his long period of service, he watched over the emergency stations in Berlin with great zeal and prudence. He also aided in establishing the first life-saving station at Müggel Lake. Meyer was also instrumental in founding the German executive committee for the investigation and treatment of cancer, on which committee he served for many years as general secretary. He likewise aided in the organization of the German Samariterbund. Together with Paul Jacobsohn and Georg Liebe, he published the "Handbuch der Krankenversorgung and Krankenpflege," and in collaboration with Ministerial Director Kirchner, Dr. Bumm, president of the central public health bureau, Geheimrat Dietrich and Geheimrat S. Alexander, he edited the "Archiv für Rettungswesen."

Marriages

LE GRAND HAVEN HARDY, Salt Lake City, to DR. SUSANNE EDWARDS SCHUYLER HAIGH of New York, at Summit, N. J., July 9.

LESTER J. GILROY, Pawtucket, R. I., to Miss Helen Marie McCaffrey of Attleboro, Mass., June 4.

E. ALBERT AISENSTADT, Picher, Okla., to Mrs. Minnie Lee Spencer of Long Beach, Calif., recently.

CHARLES HARKNESS WILLETS to Miss Ethel Armstrong, both of Philadelphia, in New York, July 21.

CHARLES ALLEN PRYOR, Huntington, W. Va., to Miss Augusta Keene of Beckley, June 19.

HOWARD ERNEST CARRUTH, Portland, Ore., to Miss De Rosa Denham of Topeka, Kan., June 14.

REXWALD BROWN to Miss Mabel Claire Johnson, both of Santa Barbara, Calif., recently.

ROGER V. WALKER, Detroit, to Miss Helen F. Reade of Escanaba, Mich., August 15.

GEORGE V. VANDEVERT, Bend, Ore., to Miss Olda Marie Paulsen of Astoria, June 27.

HUGH HAY ADAMS, Issaquah, Wash., to Miss Gertrude Jane Lackie of Seattle, August 4.

ARLEY DOYNE CATHEY, El Dorado, Ark., to Miss Ida Neumann of Stuttgart, recently.

FRANK L. RICHARDS to Miss Julia Craig, both of Huntingdon, Pa., at Altoona, recently.

ADOLPH A. WALKLING, Philadelphia, to Miss Marian Ware of Salem, N. J., August 11.

JAMES WOOLEY MORGAN to Miss Esther Chapman, both of Modesto, Calif., July 15.

FRED D. WEST, Beaumont, Calif., to Miss Helen Mossberg of Long Beach, July 13.

GERALD RAAP, Miami, Fla., to Miss Margaret Plough of Greensburg, Pa., July 5.

AUBREY B. WEBSTER to Miss Charlotte W. Lachlan, both of Philadelphia, August 9.

WILLIAM FLOYD DEAL, Edmon, Kan., to Miss Arda Wallace of Goodland, June 24.

HEINRICH GRUENER, Speyer, Germany, to Miss Eva Eid of Cincinnati, July 24.

ELMER E. WELLS to Miss Frances Bull, both of Ironton, Ohio, June 13.

WALTER T. ANDERSON to Miss Emily Canby, both of St. Paul, in June.

LOUIS BERNSTEIN to Miss Sarah Mentz, both of New York, July 4.

Deaths

David Bovaird ✠ Clifton Springs, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1892; formerly attending physician to the Presbyterian, the New York City Children's and the Seaside hospitals, and St. John's Guild, New York; served in U. S. Army in France during the World War with the rank of lieutenant colonel; at the time of his death superintendent of the Clifton Springs Sanatorium; member of the American College of Physicians; the American Pediatric Society, the New York Pathological Society, the American Association for the Advancement of Science and the Harvey Society; aged 56; died, August 10, following a long illness.

Edward Buckland Moseley ✠ Brig.-Gen., U. S. Army, retired, Los Angeles; University of Pennsylvania School of Medicine, Philadelphia, 1868; died, August 5, aged 77, following a long illness. General Moseley served in the Civil War, in the campaigns against the Sioux, Cheyenne and Ute Indians, and in the Philippine Islands, where he was in charge of the Santa Monica Military Hospital, Manila, and the Second Reserve Hospital, Southern Luzon. He was chief surgeon of the Department of Colorado at the time of his retirement, for physical disability, May, 1907.

Thomas Archibald MacKenzie, Miles City, Mont.; University of Edinburgh, Scotland, 1903; served with the British Army in 1915, and with the U. S. Army in 1918, in Mesopotamia and France during the World War; aged 46; died, July 29, following an operation for strangulated hernia.

William A. Kimmet ✠ Oak Forest, Ill.; Northwestern University Medical College, Chicago, 1892; specialized in surgery; assistant superintendent to the Cook County Infirmary and Tuberculosis Hospital; aged 51; died, August 12, following an appendectomy.

Richard May Counterman, Stigler, Okla.; University of Tennessee College of Medicine, Memphis, 1897; president of the board of medical examiners of eastern Oklahoma, 1903; formerly health officer of Haskell County; aged 54; died, July 30, in St. Louis.

George Arthur Winters, Montreal, Canada; University of Toronto Faculty of Medicine, Toronto, 1902; served with the Canadian Army Medical Corps during the World War; aged 46; died suddenly in Toronto, July 3, of diabetes mellitus.

Charles Bernard Rentz, Sanborn, Iowa; Rush Medical College, Chicago, 1901; served with the M. C., U. S. Army, in France during the World War; aged 45; died recently at the government sanatorium, Springfield, Ill., of tuberculosis.

George Edgar Benson ✠ Minneapolis; University of Minnesota Medical School, Minneapolis, 1901; member of the American Academy of Ophthalmology and Oto-Laryngology; aged 46; died, July 31, of endocarditis.

Daniel H. Prunk, Indianapolis; Eclectic Medical Institute, Cincinnati, 1856; College of Physicians and Surgeons of Indiana, Indianapolis, 1876; Civil War veteran; aged 94; died, August 2, of bronchopneumonia.

Henry B. Myers, Ewing, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1898; member of the Kentucky State Medical Association; aged 57; died, July 26.

David Woolfolk Barrow ✠ Lexington, Ky.; University of Michigan Medical School, Ann Arbor, 1908; aged 40; died, July 27, at St. Joseph's Hospital, of injuries received in an automobile accident.

William L. Case, Mount Gilead, Ohio; Cleveland University of Medicine and Surgery, 1877; member of the Ohio State Medical Association; aged 72; died, July 31, following a long illness.

C. R. Ward, Northome, Minn.; Hahnemann Medical College and Hospital of Chicago (The General Medical College), 1880; aged 68; died, May 30, at the St. Olaf Hospital, Austin, Minn.

Flora Cecil Maclean, San Francisco; California Medical College, Los Angeles, 1899; aged 48; died, July 29, at St. Francis Hospital, of heart disease, following a hysterectomy.

Joseph Alphonsus Underhill, Larchmont, N. Y.; Medical Department of the University of the City of New York, 1888; aged 57; died, July 30, of arteriosclerosis and heart disease.

Ernest Linwood Clough ✠ Pickering, La.; Kentucky School of Medicine, Louisville, Ky., 1897; aged 56; died, recently at the Hotel Dieu, Beaumont, Texas, following an operation.

George Irwin Campbell, Grand Valley, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1897; aged 55; died recently of chronic nephritis and heart disease.

Charles A. Zeller ✠ Dalton, Pa.; Medico-Chirurgical College of Philadelphia, 1896; president of the school board, and the Dalton Board of Health; aged 50; died, July 23.

Albert Osburn, Tacoma, Wash.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; member of the Washington State Medical Association; aged 68; died, July 26.

Clarence Everett Brent, Philadelphia; Howard University School of Medicine, Washington, D. C., 1910; on the staff of the Mercy Hospital; aged 38; died, July 28.

George Marshall Lewis ✠ Brockton, N. Y.; College of Physicians and Surgeons, Kansas City, Kan., 1898; aged 51; died, July 13, of septicemia and diabetes.

Joseph Simpson Turney, Hartselle, Ala.; Vanderbilt University Medical Department, Nashville, Tenn., 1882; aged 65; died, June 14, following a long illness.

Daniel Hamilton, Harriston, Ont., Canada (years of practice); practitioner in Harriston for more than sixty years; aged 86; died, June 2, of senility.

William Alexander Wilson, Radford, Va.; University of Virginia Department of Medicine, Charlottesville, 1874; aged 71; died, June 22, of senility.

Samuel Lamb Rowan, Wesson, Miss.; Vanderbilt University Medical Department, Nashville, Tenn., 1904; aged 44; died, July 17, in Atlanta, Ga.

Jeremiah Kelley Vincent, Greenwood, Ind.; Medical College of Ohio, Cincinnati, 1852; aged 92; died, June 24, following a fracture of the hip.

Harry Thomas Dunn, Doon, Iowa; State University of Iowa College of Medicine, Iowa City, 1920; aged 30; died, August 3, of tuberculosis.

John M. Frazee, Maysville, Ky. (years of practice); served in the Confederate Army during the Civil War; aged 85; died, July 31, of senility.

Joseph Wood Ferguson, Kansas City, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 63; died, July 30, of myocarditis.

Francis Romaguera, New Orleans; University of the South Medical Department, Sewanee, 1908; aged 41; died, July 27, of chronic nephritis.

Anthony B. Shelby, Huntsville, Ala. (licensed, Alabama, 1878); aged 77; Confederate veteran; died, August 2, following a long illness.

William Isaac Whitaker ✠ Flint, Mich.; Michigan College of Medicine and Surgery, Detroit, 1898; aged 60; died, August 2, of tuberculosis.

William B. Pryor Jones, Petersburg, Va.; Hahnemann Medical College and Hospital of Philadelphia, 1884; aged 63; died, July 14.

Albert A. Phipps, Greensboro, N. C. (years of practice); veteran of the Civil War; aged 92; died, June 19, of cerebral hemorrhage.

Arthur Johnson McDonald, Bedford, Ind.; Louisville (Ky.) Medical College, 1882; aged 63; died, July 30, of cerebral hemorrhage.

Henry M. Featherstone, Prescott, Ont., Canada; Trinity Medical College, Toronto, 1895; aged 51; died recently in Brockville.

John H. Bogart, Clinton, Ind.; University of Michigan Medical School, Ann Arbor, 1868; aged 78; died, August 5, of senility.

John Boyd Hayes, Nashville, Tenn.; University of Tennessee College of Medicine, Memphis, 1890; aged 68; died, June 14.

Elmer E. Evans, Lititz, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1885; aged 61; died, August 2.

Henry T. Hoople, Vale, Ore.; University of Oregon Medical School, Portland, 1897; aged 42; died, June 11, at Los Angeles.

Orrin Arthur Clark, Long Branch, N. J.; Baltimore Medical College, 1894; aged 55; died, July 29, of malarial cachexia.

Orlando C. Wilson, Ottawa, Ohio; Cleveland Medical College, 1877; aged 73; died, July 26, of peritonitis.

Frederick Falk, Indianapolis (licensed, Indiana, 1897); aged 53; died, May 15.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

ALBARGIN NOT ACCEPTED FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. It declares Albargin inadmissible to N. N. R. because (1) it is an unessential modification of silver nitrate and (2) the therapeutic claims are unwarranted.

W. A. PUCKNER, Secretary.

Albargin is a product of Farbwerke, vorm. Meister, Lucius and Bruening, Hoechst. a. M., Germany. The claim is made that it is a compound of silver nitrate with gelatose, containing 15 per cent. of silver. Albargin was formerly described in New and Nonofficial Remedies. In 1919, after Sollmann (*Jour. Am. Pharmaceutical Assn.*, Vol. 7, p. 77) had shown that, contrary to the claims advanced for it, Albargin contained silver ions, precipitated chlorids and albumin and produced irritation, the Metz Laboratories (the American distributors) were informed of these facts. They were advised that the continuance of Albargin in New and Nonofficial Remedies was conditioned on a thorough revision of the claims. The Metz Laboratories withdrew the advertising then in use and agreed to revise the claims when further advertising was issued. On this agreement Albargin was retained. Subsequently, however, it was omitted because it was off the market.

Manufactured by Farbwerke vorm.
Meister Lucius & Brüning Hoechst M Germany
ALBARGIN
TRADE MARK REG. U.S. PAT. OFFICE
1 Ounce
H. A. METZ LABORATORIES, INC.
122 Hudson St. New York, N. Y.

Albargin being again available, the Metz Laboratories requested its reacceptance for New and Nonofficial Remedies. They submitted an advertising leaflet in which were reiterated the claims for non-irritation and absence of pain to which objection had been made in 1919, omitting only the claim for non-precipitation of albumin and chlorids.

For example, the present advertising contains such claims as:

"Albargin combines the advantages of albumin compounds of silver and of silver nitrate."

"Dialyses through animal membranes, thus possessing an invaluable therapeutic advantage."

"Because of its dialysing properties, Albargin possesses far greater power than other albumin compounds of silver to penetrate living membranes and tissues."

". . . Produces neither irritation nor pain."

The Metz Laboratories were asked for the details of the experiments which formed the basis for the claim that Albargin dialyzes through animal membranes. Attention also was called to the fact that the present advertising contained claims that had been objected to in 1919, and that experiments had shown that Albargin contained about one-fifth as much ionic silver as does silver nitrate.

As evidence that Albargin dialyzes through animal membranes, the firm sent references to the literature, including

a report by P. G. Unna and Golodetz (*Dermatol. Wochenschrift*, 1917, No. 20), and of C. Cronquist, Malmoe (*Therap. Monatschr.* April, 1909). A number of abstracts and reprints of clinical papers were also submitted.

An examination of specimens of Albargin shows that its antiseptic activity, determined by a modified Dreser yeast method, is exactly the same as that of a silver nitrate solution of equal silver content, the silver content by this biologic method being 14.55 per cent. An independent chemical determination made in the A. M. A. Chemical Laboratory on the same specimen demonstrated that it contained 14.4 per cent. of total silver. This correspondence shows that all of the silver in Albargin is in ionic form and none in the colloidal form. In other words, the silver of Albargin is not combined with gelatose but is in the same condition as the silver of silver nitrate. That the silver is in ionic form is confirmed by the dialysis of Albargin according to the papers of P. G. Unna and Golodetz and of C. Cronquist, cited by the Metz Laboratories as evidence. The silver of Albargin dialyses readily, which would not be the case if it were combined with the gelatose. It is the silver nitrate that dialyses and not the "Albargin."

There remained the theoretical possibility that the gelatose might mitigate the irritant action of the silver nitrate by acting as an indifferent demulcent. To determine this point, a 0.5 per cent. solution of Albargin was compared with a 0.1 per cent. solution of silver nitrate. The two solutions had approximately the same silver content. The irritant action was tested on the nose and mouth by two persons who had experience in such comparison. Neither could detect a notable difference.

The clinical abstracts and papers that were submitted agreed in affirming the efficiency of Albargin in the treatment of gonorrheal infections, but did not claim that it is more efficient than silver nitrate solutions of equal silver content. In these it is claimed that Albargin is not seriously irritant in therapeutic concentrations, but in none is it stated that the actual comparisons have been made with silver nitrate solutions of equal silver content. They contain the claim—evidently erroneous—that Albargin does not precipitate proteid, but without having tried the experiment.

The evidence forces the conclusion that solutions of Albargin act in every way like solutions of silver nitrate of the same silver content and that the action of Albargin is due solely to the silver nitrate it contains. As the gelatose serves no useful purpose, its presence in Albargin is unscientific.

In view of these facts the Council declares Albargin inadmissible to New and Nonofficial Remedies because (1) it is an unessential modification of silver nitrate and (2) the therapeutic claims are unwarranted.

Correspondence

"THE INTRACUTANEOUS GUINEA-PIG TEST FOR HUMAN SUSCEPTIBILITY AND IMMUNITY TO DIPHTHERIA"

To the Editor:—May I refer to the correspondence between Dr. Zingher and myself, begun with his letter in THE JOURNAL, April 7, p. 1023, criticizing my article in THE JOURNAL, March 17, 1923, p. 748? I had thought that the matter was closed with my answer (THE JOURNAL, May 12, p. 1399). Dr. Zingher's subsequent letter (THE JOURNAL, June 23, p. 1867) requires further reply, and I shall endeavor to be brief.

Dr. Zingher certainly has not given my method a trial; if he had, he could not claim as he does that the intradermal guinea-pig test is subject to error. In his latest letter he quotes me as saying that "Zingher perpetrated the same fault as Römer in his modification." What I really said was: "Zingher's was in some respects better, but he *perpetuated* the same fault." Again he quotes me as saying "simplicity, practicality, accuracy and originality of merit." What I actually said was "simplicity, *practicability* and originality of application."

To return to the essentials—my claims are briefly as follows:

1. In Dr. Zingher's modification of Römer's method, one cannot possibly have more than $\frac{1}{1000}$ minimal lethal dose of free toxin in the injection which contains the amount of antitoxin tested for (i. e., $\frac{1}{100}$ unit per cubic centimeter).

2. One one-thousandth minimal lethal dose of toxin is not sufficient to produce necrosis, as claimed by Dr. Zingher. (This is proved not only by gross appearance but also by histologic examination of the lesion.)

3. Intracutaneous doses of toxin may vary considerably in their percentage differences from each other, without any regular variation in the lesions produced, *so long as the doses all remain definitely under the necrosing dose.* Hence the uncertainty of readings with Zingher's method; differences of less than one-half unit of antitoxin per cubic centimeter in the serum tested are not clearly shown, owing to the fact that there is not sufficient free toxin in the critical test dose to give a definite and uniform reaction; the free toxin in the mixture is so far under the necrosing dose that reactions are indefinite.

4. The preceding statement is easily verified by attempting to repeat the experiment detailed in Dr. Zingher's original article, represented by Guinea-Pig 5 (*J. Infect. Dis.* **19**:561 [Oct.] 1916). The reactions obtained simply cannot be read by any criterion described in the paper.

5. In my modification, the quantity of free toxin in the dose which establishes the strength of the serum is precisely sufficient to produce a definite, unmistakable reaction, just short of necrosis. This amount is such that if the amount of antitoxin in the test serum is reduced by so little as $\frac{1}{100}$ unit per cubic centimeter, unmistakable necrosis results (not only evident to the eye of the inexperienced, but demonstrable by section), whereas, if the antitoxin is increased by so little as $\frac{1}{100}$ unit per cubic centimeter, no reaction results. (The toxin should contain about 25 minimal lethal doses per L+ dose.)

6. I claim that:

(*a*) My test is a distinct improvement in technic, it utilizes a totally different criterion of reaction from previous tests, and it detects (in serums containing small amounts of antitoxin) variations of $\frac{1}{100}$ unit of antitoxin per cubic centimeter.

(*b*) Neither Zingher's nor Römer's test is as sensitive or can be as accurately read.

(*c*) The use proposed for it by me, namely, the testing of individuals for their immune status, by this method instead of by the Schick test, is a distinctly new application of the principle.

7. Dr. Zingher's claim that he proposed his test for this purpose is not substantiated by a perusal of his article.

8. Studies of the true immune status of persons subjected to the Schick test prove that we cannot satisfactorily read reactions in persons who are protein sensitive. In this group the error is frequently as high as 50 per cent. This statement applies to the most experienced operators.

9. The "safe" use of the Schick test requires such an amount of experience, and the commercial distribution of Schick toxin is so subject to deteriorating influences, that it should be used only by those having occasion to apply it to large numbers of children. When protein reaction occurs, no reading should be attempted by any one.

10. The remedy for this state of affairs is the adoption of the new method by laboratories, and the submission of blood specimens by physicians who have only a few tests to make. Guinea-pigs are plentiful and comparatively cheap, and eight

tests can be placed on one animal. Any reasonably qualified laboratory worker can carry out the test, and false positives or negatives do not occur.

WILFRED H. KELLOGG, M.D., Berkeley, Calif.
Director, California State Hygienic Laboratory.

"A MULTIPLE ELECTRICAL STETHOSCOPE FOR TEACHING PURPOSES"

To the Editor:—I was much interested in reading Dr. Richard Cabot's communication (THE JOURNAL, July 28). It may be of interest to know that this idea had its inception in the laboratory of physics of Purdue University. Prof. R. B. Abbott of that department had been working with the same idea in view and finally perfected the instrument, which he demonstrated first to the summer school of Purdue University in 1922. Oct. 27, 1922, he demonstrated the apparatus to the Tippecanoe County Medical Society; November 3, to the faculty of Purdue University, and November 10, to the student body of Purdue University. In each instance the large lecture room in the physics building was used. It seats 250 persons, and each was able to hear heart beats even though the auditors were in the distant corners of the room.

Professor Abbott makes phonographic records with this instrument. These he can broadcast with the same radio apparatus great distances so that they may be heard in Boston or in San Francisco. This he does with the apparatus direct also.

His instrument has been in use in the hospital of the University of Iowa for some time. It is used there to demonstrate the fetal heart beat. The University of Illinois also has one. The department of obstetrics of the University of Michigan is constructing one according to his instructions. The professor has a patent pending to cover the transmitter, which is the essential part of the apparatus. A description of the apparatus appeared in the *Physical Review*, February, 1923. Priority of invention must go to Professor Abbott, for the reference, in the article mentioned, to the demonstration of the apparatus, is really to his presentation of the idea to the American Physical Society, Dec. 1, 1922.

GEORGE F. KEIPER, M.D., La Fayette, Ind.

WHISPERED BRONCHOPHONY IN EARLY TUBERCULOSIS

To the Editor:—During the past year I have been greatly interested in the several articles that have appeared in THE JOURNAL concerning the diagnosis of early tuberculosis of the lungs. Not a few of these articles have dealt with the subject by laying special emphasis on the physical signs exhibited by the patient at examination—and rightly so. It has surprised me, however, to observe that in several instances no mention has been made of the transmission of the whispered voice sound over the infected area. Inspection of the chest during respiration, tactile fremitus, supraclavicular depressions, percussion, and auscultation from the point of view of râles have been adequately discussed. Whispered bronchophony or a high pitched whispered voice sound is of value in diagnosing both types of early tuberculosis in the chest (i. e., the adult type of apical lesion, and the glandular infections of the young).

As a rule, the infant and the child will have either the acute miliary or the glandular type of infection. The miliary type is easy of diagnosis, and I will not discuss it further. The glandular type, which has its focus in the tracheobronchial lymph nodes, is frequently overlooked by many practitioners who are not overfamiliar with chest examinations in the child. Most of these physicians either fail to try a d'Espine sign or do it incorrectly. In order to obtain a positive d'Espine sign we must have high pitch whisper audible over the spinous processes of the vertebrae below the seventh cervical vertebra. Like most other things in medicine, this sign is not pathognomonic of hilum tuberculosis, nor is it always found when these glands are enlarged. Other conditions will give a positive d'Espine sign. But if a positive d'Espine sign is present, a roentgenogram is indicated always. This, in connection with a good history and careful clinical observation, will establish the correct diagnosis. The d'Espine test should always be made; for, even if it is not infallible, what other physical signs of value are there in tracheobronchial adenopathy?

In the adult type of infected lung apex in which a focus has started up actively, one of our first pathologic changes is consolidation of an area, however small it may be. Eventually, when this is large enough, we may expect signs of consolidation. Whispered bronchophony is one of these signs, and may occur alone or in connection with others. If a focus is present, we are likely to get a high pitched whisper appearing to be rather far from the ear if the lesion is small, because it will be faintly heard. As the lesion becomes larger, our whispered voice will grow more intense and of higher pitch. The mechanics of this is simple. It is a case of consolidated area transmitting the whisper, audible in the bronchi, to the chest wall better than the alveoli will do when filled with air. The consolidation also raises the pitch of the sound. Theoretically, undoubtedly, the râles will appear first, but they do not always do this. I have seen numerous cases, both in my army service and in private practice, in which whispered bronchophony was present before any râles were audible, and this sign in a lung led me to suspect that an infected area was present, which later was confirmed by roentgen-ray examination and by the clinical progress of the case.

H. C. TOOKER, PH.B., M.D., Springfield, Mass.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

COATING FOR PILLS TO RESIST GASTRIC JUICE

To the Editor:—Please let me know a coating that resists the action of normal gastric juice, for such pills as are intended for absorption only in the intestine. Is not salol very desirable on account of its final liberation of phenol? Will certain capsules serve the same purpose?

C. L. TUNG, Ann Arbor, Mich.

ANSWER.—The attempt to prepare pills, tablets or capsules which will pass the stomach unchanged but which will disintegrate in the intestine has not proved very successful. In the main, the attempt has been to coat such pills, tablets or capsules (*a*) with keratin, (*b*) with gelatin rendered insoluble by treatment with formaldehyd, and (*c*) by mixing the drug with wax, solid fats or paraffin. An examination of keratin as a means of coating pills was made in the A. M. A. Chemical Laboratory, and was the subject of a report of the Council on Pharmacy and Chemistry in 1911. The examination demonstrated that the keratin on the market was 98.73 per cent. digestible in acid-pepsin solution, and was therefore unfit for the production of "enteric coated pills." The use of phenyl salicylate (salol) for the coating of pills has the objection that the coating is brittle and the method is adapted, therefore, only for extemporaneous preparations. Another objection is that its use requires the administration of a considerable dose of phenyl salicylate. A method for the hardening of gelatin by formaldehyd was published by Ballenger and Elder (THE JOURNAL, Jan. 17, 1914, p. 197). The difficulty inherent in this process is that the treatment by formaldehyd must harden the gelatin sufficiently so that it

will not be attacked by the gastric juice, but not enough to prevent its disintegration by the intestinal fluid. A study of the production of "formaldehyzed" capsules was made by Scoville (*J. Am. Pharm. A.* **4**:1241, 1915). He found that by immersing the filled gelatin capsules in 1 per cent. formaldehyd solution for thirty seconds and allowing them to stand two weeks, a coating resulted which was suitable for enteric purposes for about a year and a half. After that the capsules gradually became less soluble in alkalis and became unfitted for use.

The use of fatty excipients was reported by Ballenger and Elder in the article in which they described their experiments with the hardening of gelatin by means of formaldehyd. They state that "an even more satisfactory method of carrying through the stomach such remedies as sodium carbonate, potassium iodid, sodium salicylate, etc., is obtained by combining the desired remedy with mutton-suet and paraffin." N. S. Davis (THE JOURNAL, Oct. 14, 1916, p. 1160) incorporated drugs such as sodium iodid, guaiacol and oil of sandalwood with a mixture composed of one part of beeswax and three parts of castor oil previously melted together, and enclosed the pills produced in this way in gelatin capsules.

QUANTITATIVE DETERMINATION OF BISMUTH

TO THE EDITOR:—I should greatly appreciate information as to whether there exists a method for the quantitative determination of minute amounts of bismuth in small quantities of body fluids after the administration of that element. Where can such a method be found, or where should it be looked for? Is any discussion of the relative merits of several methods available in the chemical literature?

M. D., New York.

ANSWER.—According to S. Fränkel's Praktikum der medizinischen Chemie (Berlin, Urban & Schwarzenberg, 1918, p. 357), the detection of bismuth in urine is as follows: "The urine is evaporated to one-fifth its volume, and then treated with concentrated hydrochloric acid and a gram or so of potassium chlorate, and warmed on a water bath until the odor of chlorin has disappeared. It is treated with sodium bicarbonate until the solution is only weakly acid; then, without filtering, the bismuth is precipitated by means of hydrogen sulphid. The bismuth sulphid is filtered off and dissolved in the least amount of hot concentrated hydrochloric acid." Instead of then making the qualitative test as the author describes, the bismuth may be determined according to one of a number of analytic methods given in standard textbooks.

We have on file no record of a discussion in chemical literature of the relative merits of the various methods. In Sollmann's Textbook on Pharmacology, reference will be found to literature considering the absorption and elimination of bismuth. This work was before the introduction of bismuth in the treatment of syphilis.

MAGNESIUM SULPHATE AS ANALGESIC—USE OF GLYCERIN AND PHENOL IN OTOLOGY

To the Editor:—1. When used in a cold, saturated solution, does magnesium sulphate (Epsom salt) as a topical application on unbroken skin surface possess analgesic properties to any marked degree? 2. How much magnesium sulphate must be added to 1 ounce of glycerin to obtain a saturated solution? 3. Does glycerin, in any appreciable degree, neutralize phenol (as is done by alcohol)? 4. Is a 10 per cent. solution of phenol in water more destructive of tissue (the ear drum) than the same strength solution in glycerin? 5. If there is a difference, which has the greater pain relieving properties, a 10 per cent. solution of phenol in water, or 10 per cent. solution of phenol in glycerin?

M.D., Kansas.

ANSWER.—1. No.

2. About 1 gm.

3. Neither glycerin nor alcohol neutralizes phenol (carbolic acid). They merely act as better solvents, which tend to remove the phenol from the tissues.

4. Yes.

5. The aqueous solution is somewhat more efficient.

REMOVAL OF ADHESIVE PLASTER

To the Editor:—In THE JOURNAL, July 7, Dr. H. F. Zoller recommended the use of ethyl acetate for the removal of adhesive plaster. Since it is next to impossible to obtain ethyl acetate at ordinary (country) drug stores, and at many drug stores in small cities, I suggest a mixture of ether, 15 c.c.; alcohol, 15 c.c.; tincture of iodin, 4 c.c., and acetic acid, 4 c.c. If the adhesive strips are moistened lightly by daubing with a bit of cotton on the outside, the plaster will instantly come away, leaving hair and skin intact without the least pain.

JOHN E. STINSON, M.D., Chickasha, Okla.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, September 4. Sec., Dr. Harry C. De Vighne, Juneau.

ARIZONA: Phoenix: October 2-3. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

FLORIDA: Tallahassee, October 9-10. Sec., Dr. W. M. Rowlett, Tampa.

GEORGIA: Atlanta, October 9-11. Sec., Dr. C. T. Nolan, Marietta.

IDAHO: Boise, October 2. Dir. Mr. Chas. Laurenson, Boise.

ILLINOIS: Chicago, October 9-11. Supt. Mr. V. C. Michels, Springfield.

KANSAS: Topeka, October 9. Sec., Dr. Albert S. Ross, Sabetha.

MASSACHUSETTS: Boston, September 11-13. Sec., Dr. Charles E. Prior, Room 144, State House, Boston.

MICHIGAN: Lansing, October 9. Sec., Dr. Beverly D. Harison, 707 Strch Bldg., Detroit.

MINNESOTA: Minneapolis, October 2-4. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

MONTANA: Helena, October 2. Sec., Dr. S. A. Cooney, 205 Power Bldg., Helena.

NEW HAMPSHIRE: Concord, September 13-14. Sec., Dr. Charles Duncan, Concord.

NEW JERSEY: Trenton, October 16-19. Sec., Dr. Alexander MacAlister, State House, Trenton.

NEW MEXICO: Santa Fe, October 8-9. Sec., Dr. W. T. Joyner, Roswell.

NEW YORK: New York, Albany, Syracuse, Buffalo, September 24. Sec., Dr. William D. Cutter, Albany.

PORTO RICO: San Juan, October 2. Sec., Dr. Jorge del Toro, 1 Olimpe St., San Juan.

Arkansas May Examination

Dr. J. W. Walker, secretary, State Medical Board of Arkansas, reports the written examination held at Little Rock, May 8-9, 1923. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Twelve candidates, including one undergraduate, were examined, all of whom passed. Thirteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Arkansas	(1903) 79, (1906) 79,	(1911)	80
George Washington University		(1908)	75
Tulane University of Louisiana		(1922)	75, 75
Memphis Hospital Med. Coll.	(1902) 83, (1903) 79,	(1910)	78
University of Nashville Medical Department		(1906)	79
University of Tennessee		(1893)	78
Undergraduate			*

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Little Rock		(1910)	Oklahoma
University of Georgia		(1904)	Georgia
Loyola University		(1918)	Tennessee
University of Illinois		(1922)	Illinois
Hospital College of Medicine, Louisville		(1897)	Mississippi
Kentucky School of Medicine		(1889)	Mississippi
Tulane Univ. of Louisiana	(1907) Alabama, (1907),	(1915)	Louisiana
Washington University Medical Department		(1922)	Missouri
Chattanooga Medical College		(1909)	Tennessee
Memphis College of Physicians and Surgeons		(1910)	Louisiana
Baylor University		(1921)	Texas

* No grade given.

Georgia May Examination

Dr. C. T. Nolan, secretary, Georgia State Board of Medical Examiners, reports the written examination held at Augusta, May 29-31, 1923. The examination covered 10 subjects and included 100 questions. An average of 80 per cent. was required to pass. Eleven candidates were examined, all of whom passed. Nine candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Georgia	(1923, 10) 89, 89, 89, 91, 92, 92, 93, 94, 94, 94		
Meharry Medical College		(1915)	87

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta Medical College		(1914)	S. Carolina
Atlanta School of Medicine		(1908)	S. Carolina
University of Louisville		(1914)	Texas
Baltimore Medical College		(1906)	New Hamp.
Johns Hopkins University		(1914)	Maryland
Harvard University		(1920)	New Hamp.
Jefferson Medical College		(1906)	Nebraska
Meharry Medical College	(1916) Kentucky,	(1922)	Tennessee

IS THERE AN ALARMING SHORTAGE OF DENTISTS?

ALFRED OWRE, D.M.D., M.D., C.M., A.B.
Dean, University of Minnesota College of Dentistry
MINNEAPOLIS

There has been in recent years much loose criticism, both spoken and written, of dentists, dentistry and dental education. Some of it is constructive and disinterested; much of it is obviously biased. A larger percentage still seems based on insufficient knowledge of the facts. Perhaps the most disturbing statement, and the most frequently met, is that there is an appalling shortage of dentists. This is usually cited as an objection to any advancement of educational standards and requirements for the dentists. It was suggested to me that a state-wide dental survey, like that recently conducted by Dean Lyon of Minnesota in regard to the distribution of physicians, might yield some interesting facts. In conducting this I followed Dean Lyon's plan of sending a return post-card of inquiry to the 504 post-office villages of the state with a population of from 100 to 1,000. These were canvassed to learn (1) the number of whole-time dentists, (2) the number of part-time dentists, and (3) whether the dental service was sufficient. There were 454 replies, or a little over 90 per cent.

Summary of Replies

Population of Place	Replies Not Received	Number of Replies	Dentists: Resident	Dentists: Part-Time	Sufficient Service Indicated	Insufficient Service Indicated	Dental Service Required
From 100 to 199	25	75	2	5	27	43	15
From 200 to 299	17	195	19	44	68	110	67
From 400 to 499	3	47	29	10	33	14	9
From 500 to 749	3	79	57	6	68	11	7
From 750 to 999	2	58	47	2	51	1	2
	50	454	154	67	247	179	100
Uncertain as to the authoritativeness of the reply.....						4	18
Certain.....						175	82

From the tabulated summary of replies it will be noted that in the group of towns of from 400 to 499 population, only fourteen indicate insufficient service, while only eight (possibly nine) ask for dental service. (In general, a smaller town, unless it is situated in an exceptionally prosperous and well-settled farming community, could hardly support a full-time dentist.) In the group of 750 to 1,000, only one town indicates insufficient service. These figures, as a whole, hardly bear out the statements of the local alarmists.

Analyses of other communities might, and doubtless would in some cases, show other and less gratifying results. There is an important feature of the general situation, however, overlooked in this often superficial criticism. This is the *quality* of the dentists now supplied. Many of them are graduates of schools whose system worked not for proficiency but for profit to the owners. This type of man naturally renders inefficient service. Still worse, recent research has shown much of his work to be absolutely harmful. There may be an alarming shortage of *good* dentists.

A constructive attitude toward the whole question involves a change throughout. We must first produce a type of dentist who can meet the demands made on him by modern science, that is, an oral specialist, with the same fundamental training as any other specialist. We must also train large numbers of skilled technicians who, under the direction of the specialist, will perform all the needed technical work. This will involve a reorganization of the present educational system; but, contrary to the alarmist's view, it will not involve greater expense to the state or to the patient. The specialist's training will be somewhat longer than the present course, the technician's much shorter.

Such a readjustment might in the end benefit the smaller communities of less than 500 population, which now report insufficient service. President Pritchett of the Carnegie Foundation suggests in his annual report for 1921 that such communities organize, on a cooperative basis, a medical center where their needs can be met by adequately trained specialists, with proper hospital and laboratory facilities. Such a center would automatically include an oral specialist with the necessary number of trained assistants. With present telephone and automobile facilities, no community under such a plan need lack for any branch of medical service.

CLASSIFICATION OF DENTAL SCHOOLS IN THE UNITED STATES

The following classification of dental schools in the United States has been prepared by the Dental Educational Council of America and has been corrected to July 1, 1923:

Class A

University of Southern California College of Dentistry.....Los Angeles
Chicago College of Dental Surgery.....Chicago
Northwestern University Dental School.....Chicago
University of Illinois College of Dentistry.....Chicago
State University of Iowa College of Dentistry.....Iowa City
University of Louisville College of Dentistry..Louisville, Ky.
Harvard University Dental School.....Boston
Tufts College Dental School.....Boston
University of Michigan College of Dental Surgery.....Ann Arbor, Mich.
University of Minnesota College of Dentistry....Minneapolis
St. Louis University School of Dentistry.....St. Louis
Washington University School of Dentistry.....St. Louis
Creighton University College of Dentistry.....Omaha
University of Buffalo College of Dentistry.....Buffalo
Western Reserve University Dental School.....Cleveland
Thomas W. Evans Museum and Dental Institute, School of Dentistry, University of Pennsylvania.....Philadelphia
University of Pittsburgh School of Dentistry.....Pittsburgh
Vanderbilt University School of Dentistry..Nashville, Tenn.
Baylor University College of Dentistry.....Dallas, Texas
Marquette University College of Dentistry.....Milwaukee

Class B

University of Denver School of Dentistry.....Denver
(Formerly Colorado College of Dental Surgery)
Georgetown University Dental Department..Washington, D. C.
Howard University Dental College.....Washington, D. C.
Atlanta-Southern Dental College.....Atlanta, Ga.
Loyola University School of Dentistry.....New Orleans
Tulane University of Louisiana School of Dentistry.....New Orleans
University of Maryland School of Dentistry.....Baltimore
(Baltimore College of Dental Surgery was merged with it, June 15, 1923)
Kansas City-Western Dental College.....Kansas City, Mo.
University of Nebraska College of Dentistry...Lincoln, Neb.
Ohio State University College of Dentistry..Columbus, Ohio
North Pacific College of Dentistry.....Portland, Ore.
Temple University Dental School.....Philadelphia
(Formerly Philadelphia Dental College)
Meharry Dental College.....Nashville, Tenn.
University of Tennessee College of Dentistry..Nashville, Tenn.
Medical College of Virginia School of Dentistry.....Richmond, Va.

Class C

Cincinnati College of Dental Surgery.....Cincinnati
Texas Dental College.....Houston, Texas

Unclassified

University of California Dental Department..San Francisco
College of Physicians and Surgeons of San Francisco.....San Francisco
Indiana Dental College.....Indianapolis
Columbia University School of Dentistry.....New York
(Incorporation of the College of Dental and Oral Surgery of New York, and reorganization of the united schools, in progress)
New York College of Dentistry.....New York
(Merger with New York University in process of negotiation)
Ohio College of Dental Surgery.....Cincinnati
(Affiliated with the University of Cincinnati on July 1, 1923; early complete merger in prospect)

Any further information may be obtained by writing to Dr. Albert L. Midgley, 315 Butler Building, Providence, R. I.

Book Notices

WAR BLINDNESS AT ST. DUNSTAN'S. By Sir Arnold Lawson, K.B.E., M.D., F.R.C.S., Senior Ophthalmic Surgeon and Lecturer on Ophthalmic Surgery, Middlesex Hospital. Cloth. Price, $2.50. Pp. 148. New York: Oxford University Press, 1922.

In 1910, Sir Arthur Pearson retired from business because of approaching blindness. When the war came he devoted his fortune to building an institution for the care and education of the war blind. This book records the work done at St. Dunstan's by Lawson, who had under his care 825 persons totally incapacitated by blindness. The book is divided into three parts: (1) traumatic blindness; (2) nontraumatic blindness; (3) pensions and reeducation of the blind. There were 407 traumatic cases: 72 caused by bullets passing through the orbits, 17 of fracture of the occipital portion of the skull, 12 of fracture of the skull other than occipital, 16 of concussion blindness without direct wound or penetration of the globe, and 289 miscellaneous cases of blindness from premature explosions of bombs, explosive bullets, aeroplane accidents and burns. There was a notable absence of sympathetic inflammation. There were 417 cases of nontraumatic blindness, a review of which led to some conclusions concerning enlistment. In the examination of men for military service, those who have had disease of the uveal tract of both eyes should be rejected. When only one eye is involved, as the result of traumatic uveal inflammation, the man should not be accepted. A careful ophthalmologic examination should be made to rule out congenital disease, such as retinitis pigmentosa, or some chronic disease, such as chorioretinitis, thus saving the state much money in pensions. Interstitial keratitis and other varieties of inflammatory disease were found in 138 cases, of which 47 were interstitial. There were 109 cases of primary optic nerve disease, of which 62 were positively the result of syphilis and 18 more were clinically so classified. Secondary optic nerve degeneration gave 44 cases due to syphilis, cerebral tumor and meningitis. Blindness due to detachment of the retina was found in 29 cases; family atrophy, in 17; glaucoma, in 11; cataract, in 7; traumatic neurasthenia, in 4; bilateral embolism of the central retinal artery, in 2, and pituitary disease in 3. There was one each of recurrent retinal hemorrhage, exophthalmic goiter, retinitis proliferans and meningitis. Syphilis as a cause of nontraumatic blindness in the war is well shown by this review. The third part deals with pensions and the reeducation of the blind. The author well contends that men blinded by disease brought on by unfavorable conditions in the war should be pensioned. The question of syphilis and war blindness was finally settled so that men were given pensions who had loss of vision due to a syphilitic lesion, acquired or congenital, with or without a positive Wassermann reaction. That section of the book dealing with reeducation is brief, and gives an accurate picture of the difficulties and problems of this phase of the work among the war blind which ought to be known by every ophthalmologist.

TRAITÉ PRATIQUE DE CYSTOSCOPIE ET DE CATHÉTÉRISME URÉTÉRAL. Par G. Marion, Professeur agrége à la Faculté, Chirurgien de l'Hôpital Lariboisière, and M. Heitz-Boyer, Professeur agrégé de chirurgie des voies urinaires à la Faculté, Chirurgien de l'Hôpital St.-Louis. Second edition. Cloth. Price, 100 francs, net. Pp. 480, with illustrations. Paris: Masson et Cie, 1923.

This work now appears in one volume, for the sake of convenience. Slight changes have been made, but the fundamental idea and plan of the first edition is the same with the addition of some new material. All of the illustrations of the first edition have been retained, and some new ones have been added. The chapter on optics has been considerably altered. The author has given particular attention to urethrocystoscopy, which he considers of the utmost importance in many cases and a real advance. He points out that the method was developed in the United States, and he gives credit to Buerger for having popularized it. In the second part of the work he has devoted more attention to pyelography. The chapter on functional tests has been entirely rewritten, and the portion dealing with operative cystoscopy has been greatly enlarged. The increasing field of usefulness of high frequency treatment is emphasized. Some new apparatus and instruments are described, and some new ideas are presented concerning the treatment of cystitis. Other changes in this edition concern cystic dilatation of the intervesical end of the ureter, ureteral calculi embedded in the terminal portion of the ureter, and papillomas of the ureter. A unique feature of this portion of the work, which is a magnificent atlas of cystoscopy, is the fact that opposite each illustration the legends are presented in French, English, Italian, Spanish and German.

GONORRHEA AND IMPOTENCY: MODERN TREATMENT. By Edwin W. Hirsch, S.B., M.D. With an Additional Lecture on Ultra-Violet Radiation, by A. J. Pacini, M.D. Cloth. Price, $3.50. Pp. 172, with illustrations. Chicago: The Solar Press, 1922.

This small volume is a sketchy, compend-like account of the venereal diseases. It deals with each subject in the usual way, omitting much detailed information of importance. The etiology, symptoms and pathology are treated hurriedly, without sufficient detail. The treatment at times is excellent so far as it goes, and shows that the author really understands his subject. Much space is given to ultraviolet therapy and diathermy, and but little to other forms of treatment. The author slights widely accepted and long used methods practiced by urologists. This is particularly true in his treatment of the determination of cure in gonorrhea. As an exposition and advocacy of light therapy and diathermy the book has some value, giving detailed descriptions of the indications and methods of application of these forms of therapy.

ATLAS TYPISCHER RÖNTGENBILDER VOM NORMALEN MENISCHEN AUSGEWÄHLT UND ERKLÄRT NACH CHIRURGISCH-PRAKTISCHEN GESICHTSPUNKTEN, MIT BERÜCKSICHTIGUNG DER VARIETÄTEN UND FEHLERQUELLEN, SOWIE DER AUFNAHMETECHNIK. Von Dr. med. Rudolf Grashey, a. o. Universitätsprofessor an der chirurgischen Klinik in München. Fourth edition. Cloth. Price, $5. Pp. 235, with 595 illustrations. München: J. F. Lehmanns Verlag, 1923.

This excellent atlas, now in its fourth German edition, presents, first, a brief consideration of the technic of roentgenology from the construction of the apparatus to the taking of the picture and the development of the plates. This preliminary consideration is illustrated by 167 outline drawings. The remainder of the book consists of 206 roentgen-ray reproductions, together with fully detailed illustrative legends. As a guide to the interpretation of roentgenograms, the book should be exceedingly useful.

THE ANATOMY AND PHYSIOLOGY OF CAPILLARIES. By August Krogh, Ph.D., LL.D., Professor of Zoö-Physiology, Copenhagen University. Cloth. Price, $3. Pp. 276, with 50 illustrations. New Haven: Yale University Press, 1922.

The important investigations of Krogh and his assistants concerning capillaries were embodied in the Yale Silliman lectures of 1922. The lectures are now available in this very presentable volume, a welcome addition to the library of the anatomist, physiologist and biologist. Krogh distinctly disavows any claim that the book is a monograph with a complete presentation of the subject; he offers only his own views based on the researches of his own school. Repeated references to the work of others, however, with a choice bibliography make the volume approach more nearly the type of a monograph than the author modestly asserts. In discussing the anatomy of capillaries he lays stress on the importance of quantitative anatomic studies. He impresses on one the enormous number of capillary channels in the body. The Rouget cells in the capillary wall are regarded as the equivalent of the unstriped muscle fibers of the arteriole. The innervation of capillaries is fully considered, with experimental proof of the importance of local nervous mechanisms in the control of capillary contraction and dilatation. The variations in caliber are physiologically such as to meet the demands of an increase in function, e. g., in a contracting muscle. A hormone is of great importance in controlling much of this capillary action. To the supreme function of the capillaries, a function that lifts them to a plane above that of the heart, arteries or veins, the exchange of substances through the capillary walls, Krogh devotes two inter-

esting and stimulating chapters. Finally, he touches briefly on some applications of the physiology of capillaries to complex processes in health and disease. One marvels at the patience of the investigator, the ingenuity in devising experiments with delicate and complicated apparatus, the resourcefulness of the mind that conceives the plan of research, and the soundness of judgment that reaches conclusions that are logical and not extravagant. In fact, at times one is inclined to wish, though knowing the author is right in his self-restraint, that he were not so often induced to say that the investigations are still incomplete, confirmation is necessary, or that capillaries in other organs or in other animals must be studied. As a matter of fact, one has to realize that much of this work is of pioneer character, and that this investigator is merely blazing the trail for subsequent explorers. We quote the concluding paragraphs of the book, feeling that the author's hope has been realized:

> Until quite recently the word vasomotor was used as synonymous with *arteriomotor*. We have realized now that beyond the well-known arteriomotor we have certain *capillariomotor* mechanisms and, though the systematic study of the capillaries and their reactions is still in its early infancy, it is quite safe to predict that it will show a vigorous growth both as a branch of pure science and with regard to its direct and indirect applications for the benefit of mankind, and be recognized ultimately as of equal importance with the study of the heart and the arterial system.
>
> It is my hope that these lectures may help in some measure to promote the growth of this young branch of physiology and to arouse an active interest in a study which, by revealing more and more the beautiful correlation of activities in the organism, will further the purpose for which the Silliman Memorial Lectures were established.

KURZES LEHRBUCH DER KINDERKRANKHEITEN. Von Dr. Heinrich Lehndorff, Privatdozent für Kinderheilkunde an der Universität in Wien. Second edition. Paper. Pp. 276. Vienna: Josef Safár, 1922.

In this small volume the author attempts to cover the diseases of the new-born, infancy and childhood. As may be expected, many subjects must be neglected or, to say the least, handled in an indifferent manner. The care and feeding of premature infants is given one page, while tetanus neonatorum covers one and one-half pages. While only twelve pages are devoted to the whole subject of breast and artificial feeding of infants, the material is well assembled. Another example of the shortcomings of the work is seen in the chapter on typhoid fever—the subject is covered in one and one-half pages, with five lines devoted to diet. While the book averages well with similar condensed volumes covering many subjects, as in all of them it fails to meet the practical needs of the class of physicians most likely to use it.

RHUS DERMATITIS FROM RHUS TOXICODENDRON, RADICANS AND DIVERSILOBA (POISON IVY): ITS PATHOLOGY AND CHEMOTHERAPY. By James B. McNair. Cloth. Price, $4. Pp. 298, with 15 illustrations. Chicago: University of Chicago Press. 1923.

There are few plants about which so much misinformation has been disseminated as is current in the general beliefs concerning poison ivy and poison sumac. The nature of the poison, its methods of transmission, how it produces its toxic effects, and the treatment of the skin inflammation which it causes have been the theme of countless myths, miraculous stories and fanciful theories for three hundred years. The lay magazines and even some medical works have shown a lack of discrimination in their discussions of these plants. It is refreshing, therefore, to come upon a work by an investigator who has made deep researches into this puzzling subject and who has contributed perhaps more than any other toward the settlement of its baffling problems. The book consists of reprints of papers published by McNair in botanic, chemical and medical journals, a chapter not previously published, and an appendix containing case histories and a comprehensive bibliography. Most of McNair's studies have been made on *Rhus diversiloba*, while other workers have investigated *R. vernicifera*, *R. vernix* and *R. toxicodendron*. The subject is considered from the standpoints of anatomy and morphology, region and occurrence of the poison, its transmission from plant to person, the chemistry of the poisonous principle, the pathology of rhus dermatitis, individual immunity, remedies, and chemotherapy and treatment. A great amount of evidence on all phases of the subject has been reviewed, and the author's own investigations recorded. It seems to be generally agreed that the toxic constituent in the several species of *Rhus* is identical or nearly so, that the poison exists only in the cell sap of the plants, and that poisoning can take place only by contact with this juice. The poison is not contained in the pollen, trichomes (plant hairs), epidermis, cork, xylem or epidermis. The toxic substance is an aromatic, unsaturated, nonvolatile, phenolic compound which is composed of carbon, oxygen and hydrogen and which is neither a protein nor a glucosid. The flowers and green fruits are poisonous, but not the ripe fruits. The toxic principle was called toxicodendrol by Pfaff, but McNair uses the term lobinol. Absolute immunity to the poison in man does not exist, although individual susceptibility varies. The production of immunity by administration of small but increasing doses of the poison, as advocated by Ford and by Strickler, does not receive endorsement. A list of about 250 suggested remedies has been compiled from the literature. McNair recommends the de Sandfort treatment with paraffin, as for burns. In absence of this, frequent washing with a dilute solution of ferric chlorid is useful. All traces of the poison must be removed by washing with 75 per cent. alcohol or other solvent to prevent successive attacks. Practitioners, toxicologists and the general reader would do well to consult this book, as it is by far the most comprehensive and authoritative exposition of the subject that has appeared.

TRAITÉ TECHNIQUE D'HÉMATOLOGIE, MORPHOLOGIE, HISTOGENÈSE, HISTOPHYSIOLOGIE, HISTOPATHOLOGIE. Par J. Jolly, Directeur du laboratoire d'histologie de l'École des hautes etudes au Collège de France. Two volumes. Paper. Price, 70 francs. Pp. 1129, with 744 illustrations. Paris: A. Maloine et Fils, 1923.

This is one of the most thorough and complete treatises on the blood that have appeared. It deals especially with the formed elements in the blood under normal as well as pathologic conditions, and covers also the structure and functions of the marrow, the spleen, the thymus and the lymph nodes. The book will be of great value to the student and investigator because it in reality is a work on comparative hematology, and includes a great deal more about the blood of different animal species than any other book in its class. The illustrations are original; they are clear, well reproduced, and of much value and interest. There are complete subject and author indexes. The book is recommended without reservation to all who wish to have a recent, comprehensive and reliable work on the blood.

THE AETIOLOGY AND PATHOLOGY OF RICKETS FROM AN EXPERIMENTAL POINT OF VIEW. By V. Korenchevsky, M.D. Medical Research Council, Special Report Series, No. 71. Paper. Price, 4 shillings, net. Pp. 172, with 47 illustrations. London: His Majesty's Stationery Office, 1922.

This interesting monograph is one of the most comprehensive studies of rickets and osteomalacia published to date. The text is well illustrated. The author undertook twenty-three experimental studies, in each of which he gives the conclusions from his findings. He ends his work with a general summary. He has made an extensive review of the literature bearing on his experiments. His conclusions differ, as to their exact relation to diet, from some of the conclusions drawn by American investigators. The work is recommended to all interested in the progress being made in the solution of our every-day problems in infant and child nutrition.

LIÇÕES DE EMMENOLOGIE CLINICA. Por J. Adeodato, Professor cathedratico de clinica gynecologica na Faculdade de Medicina da Bahia. Paper. Pp. 292. Bahia: Romualdo dos Santos, 1923.

This is a careful study or, rather, a review of menstruation and its anomalies, in connection with general and local physiology and pathology. The subject matter was furnished by the lectures on clinical gynecology given by the author to his Bahia pupils since 1911. There is therefore little original material. It fulfils, however, its purpose of bringing together information of value to students, and even physicians, on a function—or rather, if we may believe Pinard, an accident—the importance and bearing of which are often neglected to the patient's detriment. The book is well printed in large type. There are no illustrations and no index.

Miscellany

SMALLPOX, GLOUCESTER AND PAMPHLETEER HADWEN

Dr. W. R. Hadwen of Gloucester, England, came to this country last year in the interest of the opponents of experiments on animals. THE JOURNAL stated at that time that Dr. Hadwen was not qualified to speak for the medical profession, and that he was discredited in his own country by those whose scientific opinion amounted to anything. We quote below from the *Medical Officer*, London, a recent opinion of Dr. Hadwen. The *raison d'être* was a smallpox epidemic in Dr. Hadwen's own city.

"Among the lesser lights of our profession, Dr. Walter R. Hadwen, a justice of the peace of the ancient city of Gloucester, shines with some distinction. No smallpox epidemic can be considered to be really satisfactory or complete without some of the brilliant pamphlets of this scintillating doctor; and now that smallpox has appeared in his own city, it is not to be expected that the worthy justice should hide his light under a bushel. Two most entertaining and humorous pamphlets, the results of his able pen, are being distributed free in the city. . . . At the head of one leaflet is a picture of something which we are told in the letterpress is a calf strapped down to a table. The joke in the picture probably is that the calf appears to be wearing a white waistcoat with spots on. . . . Continuing the reading below the picture, you discover that the calf's abdomen has been shaved, and that it really isn't wearing a waistcoat at all. This is first score for Dr. Hadwen. Then you find that the 69 spots represent '100 incisions, each about an inch long.' So you count the spots again and Dr. Hadwen scores a second time; for he has persuaded you to look at the pretty picture more often than you intended. . . . On the next page you read that 'Jenner was a product of his time'; and, having wondered if Dr. Hadwen is a product of his time or a throwback, you screw up the paper and use it to light a cigarette. . . . The other little pamphlet is—well not half so jolly. There's no calf picture on it and the title is most depressing: 'Scaremongering in Gloucester. Who Blackened the City?' After careful reading of this sad leaflet we are not able to answer the question. The answer to the riddle 'Who Blackened the City' might be anything. It might be . . . the Gloucester *Citizen*, which refused, we are told, to publish this rumbling of Dr. Hadwen . . . it might, of course, be Jenner! That was a good guess; but no, he isn't mentioned. Could it be Dr. Hadwen? Surely not. Then probably the answer is 'a lemon' and Dr. Hadwen has scored again. The presence of smallpox can hardly be the blackening agent, for Dr. Hadwen denies in that little leaflet that smallpox is in the city. . . . When Dr. Hadwen wrote so definitely that smallpox did not exist in Gloucester on 11th June, he must have forgotten that he read a paper on 3rd May at a sessional meeting of the Institution of Sanitary Engineers in which he said, 'In the last two months we have had about a dozen cases of smallpox.' And he must have forgotten that at the smallpox hospital, three or four miles outside Gloucester, there are several cases of severe smallpox, and a couple of hundred or so cases of mild smallpox in which the diagnosis has been verified by scores of expert medical officers, specialists in diagnosis. . . . If Dr. Hadwen specializes in pamphleteering, of which he is so able an exponent, it might be thought that he would leave others, who also are able, to conduct their businesses in which they are skilled. It may be that he is a unique genius and expert in all the arts and sciences, that he teaches law to his attorney and pastry-making to his baker. He gives good advice perhaps to his tailor and clockmaker, to his fishmonger and butcher. . . . He may give good advice to the parson, to the architect, and indeed to all the world, and be, as we said, a light . . . in our profession. We shall hear of him next delivering a lecture upon 'The Earth is Flat and Einstein is Wrong' before the Royal Astronomical Society, or on 'Pigs in Clover' before the Society for the Abolition of Self-advertisers. . . . But such erudition carries with it a responsibility to mankind which cannot altogether be evaded by asking questions after the manner of 'Why is a raven like a writing desk?' or 'Who Blackened the City?' . . . The search for the elemental ideals of beauty, truth and righteousness does not succeed along the little paths of pamphleteering and petty abuse of authority; and if ever Dr. Hadwen has the courage to survey his own mind he may find an answer to his own question."

POISONING BY HYDROGEN SULPHID

The Pittsburgh experiment station of the Bureau of Mines has established the fact that acute poisoning can be produced by low concentrations of hydrogen sulphid, which result in respiratory paralysis and death. Hydrogen sulphid is sometimes present in mines, railroad tunnels, sewers, and marshes; in various stages in the manufacture of sulphuric acid, and in the distillation of petroleum, also about some gas wells, gas plants and smelters. It is a colorless gas, which, in mines has been termed stink damp. In seven parts of air a mixture is formed, which, when ignited, explodes with violence. Wherever hydrogen sulphid exists, there is a possibility of poisoning. Its toxicity is comparable to that of hydrocyanic acid gas.

A study of the degrees of asphyxia caused by inhalation of the gas shows that when complete there is almost immediate unconsciousness. Frequently death follows before rescue can be even attempted. When rescue can be accomplished the victim usually recovers quickly. Headache and nausea may exist for several hours. In some cases men have been unconscious, but were able to return to work in two or three hours. In subacute cases, irritation of the eyes and respiratory tract are found. The degree of poisoning varies with the concentration of gas and the length of exposure. In experimental studies of hydrogen sulphid gas, made by the Interior Department at the Pittsburgh experiment station, a 1,000 cubic foot gas chamber was used for making exposures. Canaries, white rats, guinea-pigs, dogs, and a goat were used as subjects. A few experiments were made on men, using low percentages of hydrogen sulphid. The conclusions of investigators are that hydrogen sulphid is an industrial poison, the toxicity of which has not been fully realized. Cases of poisoning have occurred in relatively large numbers, and vigilance is required to prevent accidents. The exact low limit of hydrogen sulphid concentration at which it ceases to be a poison has not been determined, but is evidently below 0.005 per cent. The treatment of acute cases consists in immediate removal from the toxic atmosphere, and the immediate administration of artificial respiration.

THE PYROTANNIC ACID METHOD FOR DETERMINATION OF CARBON MONOXID

The Department of the Interior has announced an improved method for the quantitative determination of carbon monoxid in blood and air. It is a modification of Sayer and Yant's test (THE JOURNAL, June 3, 1922, p. 1745) in which a tannic-pyrogallic acid mixture was employed to hasten a color reaction. The improvement consists of making permanent color standards, of remodeling the equipment and arranging it in a pocket case, 3 by 7 by 1¼ inches. The technic is so simple that a qualitative determination can be made in three minutes and a quantitative in fifteen. The finger is punctured and the pipet filled to the 0.1 c.c. mark with blood, then to the 2 c.c. mark with water. The diluted blood is discharged into a test tube and a small amount of a mixture of equal parts of tannic and pyrogallic acid added. The tube is inverted to mix its contents and allowed to stand from ten to fifteen minutes when its color is compared with color standards. The amount of carbon monoxid in a specimen undergoing examination is determined directly from the standard which it matches most closely. Thus the procedure is simpler than blood counting, and is adapted to the bed side, the laboratory or the field.

Medicolegal

Roentgenograms Taken of Wound of Person Under Arrest

(State v. Casey (Ore.), 213 Pac. R. 771)

The Supreme Court of Oregon, in affirming a judgment of conviction of the defendant of murder, says that certain exhibits of roentgenograms were received in evidence over the objection that they were incompetent, irrelevant and immaterial. The defendant had a gunshot wound of the wrist, and it was urged in his brief that these pictures showing the wound on his arm were taken while he was under arrest, and that for that reason it was error to admit them as evidence into the record of this case. However, the plates were competent and relevant. The pictures disclosed by them were a marked aid to a correct understanding of the oral testimony. There was nothing in the record showing that the roentgenograms were taken against the will or without the full consent of the defendant. There was no suggestion in the record that the officers or any one else compelled the defendant to have the wound photographed, or that they tricked him into having the roentgenograms made, or that the officers or any one else did anything toward requiring the defendant to supply evidence against himself. It is a presumption of law, disputable, however, that official duty has been regularly performed. It cannot be presumed, in the absence of evidence to the contrary, that the officers of the law violated the rights of the defendant, or that they were guilty of wrongdoing in procuring the roentgenograms of his wounded arm.

Adjudication of Lunacy Imports Total Disability

(Forbes v. Welch (U. S.), 286 Fed. R. 765)

The Court of Appeals of the District of Columbia says that Mrs. Welch petitioned for a writ of mandamus to compel defendant Forbes, director of the Veterans' Bureau, to rate her husband as totally and permanently disabled to enter or fill any gainful occupation, and for allowance of compensation under the war risk insurance act. The petition set forth that Welch had been adjudged a lunatic and that the petitioner had been appointed committee of his person and estate. The defendant answered that the Veterans' Bureau had recognized this adjudication and was paying the petitioner on a rating of partial disability. He denied that a rating of total disability was the only correct rating for a person adjudged a lunatic, and set out examinations which had been made by physicians of the condition of the petitioner's ward, resulting in a finding of temporary partial disability of 55 per cent., and that compensation had been allowed on that basis. The petitioner demurred to the defendant's answer, and the lower court sustained the demurrer, but that judgment is here reversed and the cause remanded with instructions to dismiss the petition.

The single question involved was whether or not mandamus would lie to control the discretion of the director of the veterans' bureau and compel the finding of total disability. By the provisions of the war risk insurance act he is accorded wide jurisdiction in determining the question of disability, except in certain specified cases. As lunacy is nowhere defined in the act as constituting permanent disability, the extent of disability arising therefrom is subject to the determination of the director. The director having decided, his decision could not be reviewed in this proceeding. Nor could this court say that he acted arbitrarily, since the decision was based on evidence adduced in a matter left by law to his discretion.

This court was not impressed by the contention that the adjudication of lunacy was binding and conclusive on the director. The issue of the extent of Welch's disability, or the consideration or interpretation of the war risk insurance act, was not before the court. But the decree of lunacy was prima facie evidence of the actual insanity of the person thereby placed under guardianship, and established a status of that individual which was notice of the incapacity of the ward to all the world. It did not establish as against strangers or as between a party, or privy, and a stranger the form of the insanity of the ward, its transmissible character, or any evidentiary fact on which the ultimate adjudicated fact was grounded. Nevertheless, the decree had evidential bearing on the question of total disability. It was a dominant fact, too important to be totally ignored. By virtue of the decree, the ward was restrained from pursuing any gainful occupation. His disability, regardless of the degree of insanity, or mental or physical disqualification, was complete. It was therefore difficult to understand just how, in the face of the adjudication of lunacy, the director could justly find other than total disability. This case appeared to be one demanding the closest scrutiny and investigation in order that the petitioner might not be deprived of her rights. This court was powerless, however, in this proceeding to review the decision of the director, or to compel such an investigation.

Malpractice in Diagnosis—By Chiropractors

(Kuechler v. Volgmann (Wis.), 192 N. W. R. 1015)

The Supreme Court of Wisconsin, in this action to recover damages from a chiropractor for alleged malpractice, reverses an order that sustained a demurrer to the complaint, and remands the case with directions to overrule the demurrer and for further proceedings according to law. The complaint stated, among other things, the employment of the defendant, who negligently undertook the treatment of the plaintiff on the misapprehension that he was suffering from some derangement of the stomach with resulting nervousness and headache, and after eight months advised him to go West for relief, whereas the plaintiff afterward learned from a physician that he had been suffering from a tumor growing in his head—but he learned that too late to have anything more done than to have a large portion of his skull removed to relieve the intracranial pressure.

The trial court sustained the demurrer on the ground that the complaint, having alleged that the defendant treated the plaintiff according to the methods used by members of the defendant's profession, namely, by chiropractors, it negatived negligence and lack of skill, since the rule is that a physician is required to exercise only that degree of care, diligence, judgment and skill which other physicians of good standing of the same school or system of practice usually exercise in the same or similar localities under like or similar circumstances, having due regard to the advanced state of the medical profession at the time in question. Such, the supreme court says, is undoubtedly the rule of law in Wisconsin; and, were the complaint grounded on a lack of skill or care, or on negligence in treatment only, the trial court came to the right conclusion. But the supreme court construes the gravamen of the complaint to charge a lack of skill and care in diagnosis, in the failure of the defendant to discover the nature of the ailment from which the plaintiff suffered. Malpractice may consist in a lack of skill or care in diagnosis as well as in treatment. A woman may be in the early stages of pregnancy. A physician may diagnose it as an ovarian tumor, and may operate. There may be no lack of skill or care in the operation, but there may be in the diagnosis. In the complaint in this case, the pleader said that through a lack of skill and care the defendant negligently undertook to treat the plaintiff for a malady from which he was not suffering, and that, had the defendant possessed ordinary skill or ability in treating disease, he would, by the exercise of ordinary care, have known the true cause of the ailment. It was also alleged that the plaintiff was informed and believed that, if the defendant had used ordinary care and skill in diagnosing the affliction of the plaintiff, he would have known that the plaintiff was afflicted with a tumor and that an operation on the plaintiff at the time when the plaintiff first consulted the defendant would have effected an immediate and permanent cure. That expressly charged lack of care and skill in diagnosis, with resultant damages.

That chiropractors, who by the provisions of Section 1435 e, Wisconsin Statutes of 1921, are permitted to practice without a license in Wisconsin, are required to exercise care and skill in diagnosis, if they undertake to diagnose, there can be no doubt. Section 1435 i directly so provides and makes

them liable for malpractice. It is clear from the allegations of the complaint that the defendant undertook to diagnose as well as to treat the disease. Diagnosis is ordinarily assumed and performed by licensed medical physicians. But it may be assumed by others; and it is held that the practice of chiropractic is the practice of medicine. The fact that chiropractors abstain from the use of words like "diagnosis," "treatment" or "disease" is immaterial. What they hold themselves out to do and what they do is to treat disease, and the substitution of words like "analysis," "palpation" and "adjustment" does not change the nature of their act. Hence, when the defendant assumed to perform that duty, he must exercise the care and skill in so doing that is usually exercised by a recognized school of the medical profession. This the complaint alleged he failed to do, and the demurrer admitted the allegation. For these reasons the supreme court reaches the conclusion that the trial court erred in sustaining the demurrer.

When Limitations Begin Running in Malpractice Cases

(Sly v. Van Lengen (N. Y.), 198 N. Y. Supp. 608)

The Supreme Court of New York, Motion Term, Onondaga County, says that the complaint alleged the plaintiff's employment of the defendant to treat her; that on Nov. 30, 1918, he performed an operation on her for the removal of a tumor from the abdomen, but negligently left a gauze sponge in her body; that he continued to treat her until Sept. 28, 1921, during all of which time he negligently permitted the foreign substance to remain in the plaintiff's pelvic cavity; and that by reason of his closing the incision with the sponge inside the plaintiff's body, and by reason of his permitting it to remain during the time he continued to treat her, she suffered the injuries of which she complained. The plaintiff commenced this action, Feb. 17, 1923, to recover damages. For the action to be maintained it was necessary, under the civil practice act of New York, that it be brought within two years after the cause of action accrued. Was that done? The defendant insisted that his malpractice, if any, occurred at the time of the operation, when the incision was made and subsequently closed without removing the sponge, and, since that act occurred more than four years before the commencement of this action, he made a motion for a judgment dismissing the complaint on the ground that the cause of action set forth did not accrue within the time limited by law for the commencement of an action thereon. But that motion is denied, with costs.

If it should appear on the trial that the injury from which the plaintiff is suffering was inflicted at the time of the operation, and was not occasioned in any manner by the subsequent treatment of the plaintiff, nor by any neglect on the part of the defendant after the operation, a different situation would arise. On the decision of this motion, however, it is unnecessary, and would be improper, to anticipate what the evidence on the trial will show. The motion must be determined solely on the allegations of the complaint. They must be assumed to be true, and the plaintiff is entitled to the most favorable inference which can properly be drawn therefrom. It will be noted that the complaint alleged that the injuries complained of were occasioned, not only because the defendant closed the incision without removing the sponge from the plaintiff's pelvic cavity, but also because the defendant negligently allowed a foreign substance to remain in the plaintiff's body from day to day for upward of two and one-half years, while he continued to treat her. Accepting the allegations of the complaint as true, the plaintiff's cause of action accrued as much by reason of the alleged continuous breach of duty on the part of the defendant in treating the plaintiff up to September, 1921, and in failing to remove the sponge, as it did because of the alleged negligent act of the defendant on the day of the operation, when he sewed up the opening without removing the foreign substance. According to the complaint, the tort was a continuing one; and where the tort is continuing, the right of action is also continuing.

This precise question seems to have been decided in favor of the plaintiff's contention by the Supreme Court of Ohio in *Gillette* v. *Tucker*, 67 Ohio St. 106, 65 N. E. 865, in an action similar in all respects to the one at bar. In that case, the defendant operated on the plaintiff for appendicitis, and closed the incision without removing one of the sponges used in the operation. The defendant continued to treat the plaintiff, but neglected to remove or to attempt to remove the foreign substance. The Ohio statute provided that an action for malpractice must be commenced within one year after the cause of action accrued. The action was commenced more than one year from the date of the operation, but less than twelve months after the defendant ceased to treat the plaintiff. It was held that the limitation did not begin to run against the plaintiff's right to maintain the action until the case had been abandoned by the defendant, or the professional relationship terminated.

Drunkenness from Liquor of Own Prescription

(Johnson v. Commonwealth (Va.), 115 S. E. R. 673)

The Supreme Court of Appeals of Virginia does not agree with the contention that, because defendant Johnson, who was charged with shooting a man with intent to kill, was drunk at the time from having taken liquor to relieve a toothache, his drunkenness was involuntary and negatived specific intent. The court says that the law has always jealously guarded the effect of drunkenness as a defense in criminal cases; and, even with all the restrictions surrounding it, the doctrine is a dangerous one and liable to be abused. The rule has for ages been regarded as necessary for the safety of society, and its preservation and enforcement was never more important than under present conditions. The country is full of "bootleg" liquor, much of it impure and calculated to produce a state of wild intoxication. Provision is made by the law for procuring on prescriptions from reputable physicians a reasonable amount of pure whisky for medicinal purposes. When people undertake, as the defendant in this case did, to prescribe for themselves and to select their own supply, they must be held responsible for the consequences.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Washington, D. C., Oct. 15-20. Dr. Luther C. Peter, 1529 Spruce St., Philadelphia, Secretary.

American Association of Obstetricians, Gynecologists, and Abdominal Surgeons, Philadelphia, Sept. 19-21. Dr. James E. Davis, 111 Josephine Avenue, Detroit, Secretary.

American Association of Railway Surgeons, Chicago, Oct. 17-19. Dr. L. J. Mitchell, 29 E. Madison St., Chicago, Secretary.

American Child Hygiene Association, Detroit, Oct. 15-17. Dr. Philip Van Ingen, 125 East 71st St., New York, Secretary.

American Public Health Association, Boston, Oct. 8-11. Mr. A. W. Hedrich, 370 Seventh Avenue, New York, Secretary.

American Roentgen Ray Society, Chicago, Sept. 18-23. Dr. W. W. Watkins, Goodrich Building, Phoenix, Ariz., Secretary.

Association of Military Surgeons of the United States, Carlisle Barracks, Pa., Oct. 4-6. Col. James Robb Church, Army Medical Museum, Washington, D. C., Secretary.

Colorado State Medical Society, Glenwood Springs, Sept. 4-6. Dr. F. B. Stephenson, Metropolitan Building, Denver, Secretary.

Delaware State Medical Society, Middletown, Oct. 8-9. Dr. W. O. La Motte, Industrial Trust Building, Wilmington, Secretary.

Indiana State Medical Association, Terre Haute, Sept. 26-28. Dr. Charles N. Combs, Terre Haute, Secretary.

Kentucky State Medical Association, Crab Orchard, Sept. 17-20. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Medical Association of the Southwest, Kansas City, Mo., Oct. 4-8. Dr. E. H. Skinner, Rialto Building, Kansas City, Mo., Secretary.

Michigan State Medical Society, Grand Rapids, Sept. 11-13. Dr. F. C. Warnshuis, 410 Powers Building, Grand Rapids, Secretary.

Minnesota State Medical Association, St. Paul, Oct. 10-12. Dr. Carl B. Drake, Guardian Life Building, St. Paul, Secretary.

Mississippi Valley Medical Association, Hot Springs, Ark., Oct. 9-11. Dr. John L. Tierney, University Club Bldg., St. Louis, Secretary.

Missouri Valley, Medical Society of the, Omaha, Sept. 20-21. Dr. Charles W. Fassett, 115 East 31st Street, Kansas City, Secretary.

Pennsylvania, Medical Society of the State of, Pittsburgh, Oct. 1-4. Dr. W. F. Donaldson, Jenkins Arcade, Pittsburgh, Secretary.

Vermont State Medical Society, Bennington, Oct. 11-12. Dr. W. G. Ricker, St. Johnsbury, Secretary.

Virginia, Medical Society of, Roanoke, Oct. 16-19. Mr. G. H. Winfrey, 104½ W. Grace St., Richmond, Secretary.

Wisconsin, State Medical Society of, Milwaukee, Oct. 3-5. Mr. J. G. Crownhart, 558 Jefferson St., Milwaukee, Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

165: 781-836 (June) 1923

*Subcutaneous Fibroid Nodules in Rheumatism. E. Bronson, E. M. Carr and W. A. Perkins, San Francisco.—p. 781.
Linitis Plastica: Report of Two Cases. A. F. R. Anderson, Brooklyn. —p. 799.
*Acute Perforations of Stomach and Duodenum: Report of Sixty Cases. C. L. Gibson, New York.—p. 809.
*Treatment of Spastic Constipation. C. D. Aaron, Detroit.—p. 816.
Diagnosis and Treatment of Intestinal Obstruction. A. McGlannan, Baltimore.—p. 822.
*Unappreciated Findings in Lungs of Normal Children. C. R. Austrian and F. H. Baetjer, Baltimore.—p. 831.
*Pleuropulmonary Reflex: Its Etiology, Prevention and Treatment. B. P. Stivelman, New York.—p. 836.
*Studies in Renal Function and Metabolism in Case of Diabetes Insipidus. D. S. Hachen, Cincinnati.—p. 846.
*Splenic Anemia: Clinical and Pathologic Study of Sixty-Nine Cases. W. C. Chaney, Rochester, Minn.—p. 856.
*Elephantiasis: Clinical Review and Attempt at Experimental Reproduction. G. D. Mahon, Rochester, Minn.—p. 875.
*Study of Urinary Output and Blood Pressure Changes Resulting in Experimental Ascites. J. M. Thorington and C. F. Schmidt, Philadelphia.—p. 880.
*Significance of Wildbolz Auto-Urine Reaction in Tuberculosis: Report of 100 Cases. M. S. Lewis, New York.—p. 890.

Subcutaneous Fibroid Nodules in Rheumatism.—In thirty-eight rheumatic cases seen by Bronson and Carr, fibroid subcutaneous nodules were present in seventeen. Of those patients having nodules, six died during the observation period of two years. In only one instance did death occur in a patient not having nodules. Of the thirty-eight cases, seventeen were grouped as having serious cardiac damage. Of these seventeen, thirteen had nodules.

Acute Perforations of Stomach and Duodenum.—The results obtained by Gibson in this series of cases confirm his belief of the desirability of aiming simply to close the perforation, leaving remote and problematic after-results to be taken care of as necessity arises. The mortality of the series was 16.6 per cent., 6.6 per cent. occurring in the first eighteen hours. Of the patients giving a history of long standing gastric disturbance 30 per cent. were gastric, 70 per cent. duodenal. Of the patients giving a history of no previous trouble, 65 per cent. were gastric, 35 per cent. duodenal. The mortality from acute gastric perforation is almost double that of duodenal perforation, namely, 21 per cent., as against 12 per cent. Duodenal ulcers give a maximum of conditions requiring further operation, seven out of the eight reoperated cases being duodenal. Of the five cases of pyloric stenosis found at reoperation, four were duodenal.

Treatment of Spastic Constipation.—In the treatment of spastic constipation, Aaron says the first care is to provide physical and mental relaxation for these patients, who are usually in an overstrung nervous condition. Complete rest in bed or a fresh-air treatment is often sufficient to induce normal defecation. The principal point, however, is the prescription of a suitable diet. The indications point to a chemically acting dietetic regimen exclusively; all kinds of mechanically irritating foods are to be forbidden absolutely. In many cases it may be necessary occasionally to administer vegetables and boiled fruit in puree form. A diet should be selected that will make but slight demands on the intestine. Soothing, antispasmodic foods should be administered, while the use of water and foods acting mechanically to increase intestinal motility should be excluded. No laxative should be given. Glycerin enemas and glycerin suppositories are strictly to be prohibited. The dietetic therapy may often be combined advantageously with certain medicaments. Large amounts of fat are capable of acting in a beneficial manner, rendering the feces soft and smooth. Atropin or belladonna is the sovereign medicinal remedy.

Value of D'Espine's Sign.—D'Espine's sign, indicative of enlarged tracheobronchial lymph nodes, is regarded by Austrian and Baetjer as being of little value. A careful anamnesis with special reference to all infections is necessary if diagnostic errors are to be avoided. With a proper appreciation of the widest variations that the normal may present from the ideal, the informed clinician is better able correctly to understand the findings of the roentgenologist, and each, cooperating with the other, is less liable to error.

Pleuropulmonary Reflex.—Stivelman reviews his experience gained from pleural punctures in the course of therapeutic pneumothorax. Among 162 primary punctures, pleuropulmonary reflex was encountered in seven patients, in three of whom the attacks recurred on subsequent attempts to enter the pleural space. The most severe and outstanding symptom during the attacks was cardiorespiratory embarrassment. It was present in all. This distressing symptom was of the vago-inhibitory type in three cases and vasomotor in seven cases, the former being characterized by slowing of respiration and decreased frequency and increased force of the pulse, the latter by rapid, shallow and arrest of respiration, and rapid, feeble and ultimately imperceptible pulse and heart beat. Among 1,824 punctures for refills, i. e., thoracentesis performed in those cases in which the pleural surfaces were widely separated from each other by pneumothorax so that the needle could not possibly injure the visceral pleura and underlying lung tissue, the accident occurred but twice. Stivelman believes that injury to the inflamed visceral pleura and lung tissue underlying the point of puncture is a definite factor in the causation of this symptom complex. When symptoms pointing to the reflex make their appearance, the needle should be withdrawn at once. If the cardiorespiratory failure is of the cardio-inhibitory type, reassurance of the patient and a little patience on the part of the physician is all that is necessary, although atropin may be given subcutaneously in severe cases, none of which, however, have proved fatal. If the cardiorespiratory failure is of the vasomotor type, epinephrin should be given subcutaneously at once and stimulation should be resorted to. Hot coffee per rectum, caffein and camphor subcutaneously, have been found most useful. The temporary paralysis and amblyopia, as a rule, clear up completely within a few days and require no special treatment.

Studies on Case of Diabetes Insipidus.—Two cubic centimeters of pituitrin "O," administered intramuscularly during a twenty-four hour period, decreased the polyuria in a case of diabetes insipidus. The specific gravity was raised and the percentage of salt and urea nitrogen was increased. The maximum concentration was reached within three hours after the injection of the pituitary extract. The drug produced its effect immediately (within ten minutes) and was only transient in its action; the effect of 1 c.c. lasting from eight to twelve hours. Pituitary extract injected hypodermically enabled the kidney to excrete a larger amount of phenolsulphonephthalein. The concentration of the urea nitrogen, uric acid, and sugar in the blood was almost doubled within three hours after the injection of 1 c.c. The blood figures before and after injection remained within normal limits. There was no apparent relation between the basal metabolism and the water excretion of the kidney before and after injection.

Changes in Spleen in Splenic Anemia.—The pathologic findings and clinical records of sixty-nine patients with splenic anemia are reported by Chaney. A composite picture of the pathologic findings in the spleen in splenic anemia was found to be one of generalized fibrosis. There were no findings in the splenic tissue that would enable the pathologist to make a positive diagnosis of splenic anemia, yet the abnormality was as characteristic in this disease as in other diseases producing splenomegaly. The relation of the size of the spleen, as given by the clinical records, to the actual weight, and the fact that many adhesions were found at operation, suggested that the spleen of splenic anemia maintains its relatively normal position in the abdomen. Physical examination showed twenty-four enlarged livers, while at the operating table twenty-six showed a definite cirrhosis, and thirteen were larger than normal. In the sixty-nine patients the average erythrocyte count was 3,700,000; the hemoglobin, 53 per cent., and the leukocyte count, 4,990. The coagulation

time and the fragility test were normal, and the Wassermann tests and the stool examinations were negative.

Elephantiasis.—Believing that the hypertrophy and edema which characterize elephantiasis is caused directly by the action of pathogenic bacteria, Mahon attempted to prove it by experiments on dogs. Streptococci grown from tissue taken from the leg (elephantiasis) were injected intravenously and subcutaneously. In some of the experiments neither the operative procedure nor the injected bacteria produced any noticeable effect. In many instances the removal of the lymphatics, and particularly the ligation of the venous return, produced edema of the leg for a variable period. The edema did not persist for any great length of time and a condition resembling elephantiasis never occurred. The effect attributable to the bacteria was obtained. The results of the experiments were negative with regard to the production of elephantiasis.

Experimental Ascites.—It is suggested by Thorington and Schmidt that the loss of tonus in the abdominal musculature occurs as a means of compensating for ascitic collections which would otherwise raise abdominal venous pressure sufficiently to cause urinary suppression. It is suggested further that, since the rise of venous pressure resulting from the presence of an ascitic collection in the abdomen is limited to the venous circulation below the diaphragm, this may be a factor in the comparative limitation of the peripheral edema to the lower extremities in cases of inferior vena cava obstruction.

Wildbolz Auto-Urine Reaction in Tuberculosis.—A careful study of 100 cases has convinced Lewis that Wildbolz auto-urine test for active tuberculosis has very little, if any, significance, in diagnosis. In forty-four cases of active tuberculosis, twenty-six resulted in a positive reaction; four of the cases were classed as inactive or arrested; three acted positively to the auto-urine test. Fourteen of twenty-four nontuberculous pulmonary cases gave a positive reaction. Eleven apparently healthy persons also gave a positive reaction.

American Journal of Physiology, Baltimore

65: 1-222 (June) 1923

Effect of Experimental Rickets on Weights of Various Organs in Albino Rats. C. M. Jackson and R. Carelton, Minneapolis.—p. 1.
Does Epinephrin Affect Metabolism of Surviving Skeletal Muscles of Frog? F. R. Griffith, Jr., Boston.—p. 15.
Electrical Studies in Mammalian Reflexes. III. Immediate Changes in Flexion Reflex After Spinal Transaction. A. Forbes, S. Cobb and H. Cattell, Boston.—p. 30.
Conditions Favoring Maturation of Eggs of Asterias Forbesii. M. E. Brailey.—p. 45.
Regulation of Renal Activity. VIII. Relation Between Rate of Urea Excretion and Size of Kidneys. F. B. Taylor, D. R. Drury and T. Addis, San Francisco.—p. 55.
Study of Reversal Effects Observed in Experiments with Sodium Citrate or Allied Salts and Autonomic Drugs. W. Salant and N. Kleitman, Augusta, Ga.—p. 62.
Weight of Ovaries in Albino Rat During Gestation and Normal Lactation: Also in Females Deprived of Their New-Born Litters. J. M. Stotsenburg, Philadelphia.—p. 77.
Effect of Digestive Enzymes on Pituitary Extract Action. M. H. Rees and R. W. Whitehead, Boulder, Colo.—p. 90.
Blood Elements in Complement Deficient Guinea-Pigs. L. B. Nice, A. J. Neill and H. D. Moore, Oklahoma City.—p. 101.
*Respiratory Exchange and Alveolar Changes in Man at High Altitudes. E. C. Schneider, Long Island, N. Y.—p. 107.
*Effect of Exercise on Vitamin Requirements. M. H. Keith and H. H. Mitchell, Urbana, Ill.—p. 128.
Inhibition of Erection by Decerebration. E. G. Martin and M. L. Tainter, San Francisco.—p. 139.
Effect on Metabolism of Breathing Pure Oxygen at Pressure of One Atmosphere. A. L. Meyer, Baltimore.—p. 148.
Diastolic Phases of Cardiac Cycle in Man. J. Burstein, Cleveland.—p. 158.
*Lesions of Corpus Striatum by Radium Emanation and Accompanying Structural and Functional Changes. D. J. Edwards and H. J. Bagg, New York.—p. 162.
Study of Relation of Afferent Impulses to Activity of Central Cardiovascular Nervous Mechanism. J. Tulgan, New York.—p. 174.
Studies on Renal Tubule Function. H. L. White, St. Louis.
I. Comparison of Plasma Concentrations and Rates of Excretion of Various Urinary Constituents.—p. 200.
II. Comparison of Plasma Concentrations and Rates of Excretion of Various Urinary Constituents.—p. 212.

Respiratory Exchange at High Altitudes.—The respiratory exchange was determined by Schneider throughout the period of acclimatization during a sojourn on Pike's Peak, altitude 14,110 feet, in men sitting at rest, during a moderate amount of work on a bicycle, and during walking at the rate of 4 miles an hour. Two subjects in rest experienced no change, or at the most only a slight increase, in their gaseous metabolism; while in a third subject the high altitude resting metabolism was above that of the low altitude for forty-eight hours, during which time the increase averaged for carbon dioxide 14.2 per cent. and for oxygen 17.6 per cent. After this he returned to his low altitude metabolism level. Physical exertion caused a higher rate of metabolism than was normal for the low altitude during the first days of residence at the high altitude. Mountain sickness was found to be most severe in the physically unfit and to be associated with a low alveolar oxygen tension. Some persons were more tolerant of a low alveolar oxygen than others. The changes in the alveolar carbon dioxid tension did not indicate an alkalosis of the blood during the period of mountain sickness. Because of this fact, it has been concluded that it is doubtful whether alkalosis is an important causative factor in mountain sickness.

Effect of Exercise on Vitamin Requirement.—The results obtained by Keith and Mitchell indicate that the amount of exercise employed by them did not uniformly affect the well-being of the rats on complete rations or of those on rations lacking in vitamin B. They indicate that the exercise did distinctly hasten the appearance of the symptoms of vitamin A deficiency and hasten the death of young animals receiving insufficient amounts of this vitamin. Apparently, vitamin A is involved in the metabolism incident to increased activity of the voluntary muscles.

Producing Corpus Striatum Lesions with Radium.—A method is described by Edwards and Bagg for producing lesions in the corpus striatum by means of buried radium emanation tubes. There was no tract degeneration in the spinal cord nor structural change in the liver and other organs. The destruction of large portions of the lenticular and caudate nuclei did not give rise to outstanding defects in the coordinated muscular activity of walking and jumping. Extensive bilateral lesions, simultaneously produced, have been attended by tremors and signs of hypertonia exhibited in an unusual bodily attitude, with subsequent return to normal—or apparently normal—condition.

American Journal of Public Health, Detroit

13: 531-624 (July) 1923

Public Health in Orient. W. W. Peter, Shanghai, China.—p. 531.
Cooperation Schick and Toxin-Antitoxin Plea. J. A. Ceconi.—p. 539.
Algae of Genus Chara and Mosquito Larvae. A. B. Vasconcelos, Mexico City.—p. 543.
Rural Health Work from National Viewpoint. W. F. Draper.—p. 547.
Sanitation of Bottled Beverages and Soda Fountain Drinks. J. P. Kilcourse, Chicago.—p. 550.
Relation of State to Sanitary Milk Supply. W. Levin, Topeka, Kan.—p. 557.
Relative Prevalence of Bacteria in an Imhoff Tank. M. Hotchkiss and T. J. Murray, New Brunswick, N. J.—p. 562.
Effect of Gentian Violet on Viability of Some Water-Borne Bacteria. E. W. Stearn.—p. 567.
Well Rounded County Health Department. G. W. Duvall, Owensboro, Ky.—p. 571.

Atlantic Medical Journal, Harrisburg, Pa.

26: 575-648 (June) 1923

*Operative Treatment of Suppurative Meningitis. W. P. Eagleton, Newark, N. J.—p. 575.
*Longevity of Plates and Other Foreign Bodies in Treatment of Fractures of Long Bones. M. Behrend, Philadelphia.—p. 585.
*Fractures Near Ankle: With Special Reference to Fracture of Posterior Margin of Lower End of Tibia. W. L. Estes, Jr., Bethlehem, Pa.—p. 592.
Myoclonic Attacks. E. E. Mayer, Pittsburgh.—p. 598.
Present Status of Endocrine Therapy. B. A. Cohoe, Pittsburgh.—p. 602.
Health and Nutrition Work Among Pre-School Age Children. E. P. Bacon, Philadelphia.—p. 606.
Significance of Bloody and Yellow Spinal Fluid. C. L. Palmer, Pittsburgh.—p. 611.
Our Present Knowledge of Etiologic Factors in Epidemic Influenza. S. R. Haythorn.—p. 612.
Disturbance of Isohemagglutinins in Blood of Three Fatal Cases of Bacteremias. G. R. Lacey.—p. 613.

Subarachnoid Irrigation in Suppurative Meningitis.—In suppurative meningitis any attempt at continuous drainage of the cerebrospinal fluid circulatory system, Eagleton states, is

physiologically illogical and mechanically impossible. The term subarachnoid irrigation in meningitis is a misnomer. What is accomplished by the subarachnoid irrigation is not the washing away of infection from the cerebrospinal fluid system, but the removal of an altered toxic cerebrospinal fluid from the parts of the system which are not directly infected, and its replacement by a fluid of the same temperature and a similar consistency as the normal cerebrospinal fluid, the altered and toxic fluid being forced out by pressure from behind. Subarachnoid irrigation to be effectual must be instituted at an early stage in meningitis. It promises most in those cases in which there is reason to believe that the patient is suffering principally from cerebral toxemia. Subarachnoid irrigation is a highly technical procedure, requiring at least four specially trained operators; consequently, all cases of suppurative meningitis should be delegated to a special surgical service, as should all intradural operations.

Longevity of Plates Used in Fixation of Fractures.—Behrend asserts that metal plates, nails or other foreign materials used in reuniting fragments of fractured bones may remain in situ indefinitely under favorable circumstances.

Fractures Near Ankle.—Fracture of the posterior margin of the tibia in Estes' opinion is a fracture that deserves wider recognition and is a serious and usual complication of posterior dislocation of the ankle. It may occur with abduction and external rotation fractures of the second degree. As an isolated lesion, it is probably an extension-compression fracture and is of more frequent occurrence than reports indicate. There is little or no displacement of the fragment. Following recognition and simple immobilization, recovery is usually prompt and complete. In one case here reported, slight permanent disability persists.

Boston Medical and Surgical Journal

189: 1-44 (July 5) 1923

Present Mode of Roentgen-Ray Therapy in Deep-Seated Lesions. F. W. O'Brien, Boston.—p. 1.
"Boston Tins." H. Cushing, Boston.—p. 8.
Preservation of Mental Health in Children. D. A. Thom, Boston.—p. 12.
Schick Toxin-Antitoxin Activities of Boston Health Department. J. A. Ceconi, Boston.—p. 21.

Canadian Medical Association Journal, Toronto

13: 379-468 (June) 1923

Problems of Obstetric Practice. W. W. Chipman, Montreal.—p. 379.
The Foot. J. A. Nutter, Montreal.—p. 387.
Dermatomyositis. F. G. Finley, Montreal.—p. 391.
Series of Cases of Purpura Hemorrhagica and Aplastic Anemia Due to Chronic Benzol Poisoning in Canning Plant. H. B. Anderson, Toronto; J. S. Boyd and A. B. Jackson, Simcoe.—p. 395.
*Four Cases of Volvulus of Small Intestine. F. J. Tees, Montreal.—p. 400.
Evidence of Organic Heart Disease. K. A. MacKenzie.—p. 406.
Immunity in Tuberculosis. C. H. Vrooman, Vancouver, B. C.—p. 411.
Psychology of Neuroses. E. D. MacPhee, Edmonton.—p. 414.
*Antipyretic Measures. H. Barbour, Montreal.—p. 420.
Direct Measurement of Venous Pressure in Man. F. A. Young, Winnipeg.—p. 423.
Malnutrition. F. W. Tidmarsh, Halifax, N. S.—p. 426.
Modern Epidemiology. T. H. Whitelaw, Edmonton.—p. 428.
*Methylene Chlorid in Anesthesia. W. Bourne and R. L. Stehle, Montreal.—p. 432.
Postoperative Recurrent Appendicitis. R. O'Callaghan.—p. 434.
Aneurysm of Arch of Aorta Associated with Aneurysm of Common Carotid Artery. M. Rady, Winnipeg.—p. 435.
*Gonococcal Arthritis in New-Born Male Infant. S. G. Ross, Montreal.—p. 437.

Cause of Volvulus of Intestine.—Tees believes that there is need for a revision of current teaching that volvulus of the small intestine can occur only in the presence of adhesions or other structural abnormalities of the intestinal tract. Greater emphasis must be placed on disordered peristaltic action, leading to a relative antagonism between adjoining segments of bowel, unequally filled. The four cases cited by Tees have in common that in each case there was a distal bowel inactive from one cause or another, with the proximal bowel thrown into unusual peristaltic activity, thus producing an antagonism which would appear to provide ideal conditions for the development of the torsion.

Antipyretics.—Among the coal tar products, Barbour says, it is an old story that antifebrin (acetanilid) and phenazone (antipyrin) exhibit a greater collapse producing tendency than do acetphenetidin and the salicyl derivatives. Among the latter acetylsalicylic acid appears to be the surest antipyretic, but its irritating properties appear to be underrated. In dogs acetylsalicylic acid, given in large amounts, produces gastric ulceration. It should be taken only with abundance of water. This is to be remembered especially in acute rheumatic fever where large doses are requisite. The tendency to gastric and duodenal ulcers has been associated by some writers with the occurrence of acute rheumatic fever. Barbour wonders whether this might be due to medication with concentrated salicylate. The cinchophen (atophan) group of drugs has recently been found to possess a high degree of antipyretic and antirheumatic efficiency. Of these tolysin (ethyl ester of paramethyl atophan) is made on the phenol salicylate principle, so that the acid radicle is not liberated in the stomach. Furthermore, it possesses little or no toxicity, because it is but slowly absorbed from the intestine. Lozinsky and Barbour were unable to kill dogs with doses of tolysin up to 5 per cent. of their own body weight, although they could prove the complete absorption of therapeutic doses both by their absence from the intestinal tract and their marked, although slow, antipyretic action. Acute rheumatic fever cases have been treated successfully by this drug.

Methylene Chlorid Anesthesia.—Bourne and Stehle report observations on the value of methylene chlorid as an anesthetic. In human subjects a stage of anesthesia not seen with other agents was observed, that is, between the so-called first and second stages a period ushered in by analgesia occurs, which is characterized by anesthesia without loss of muscular power. This stage is followed by one of severe excitement if the administration is continued. The limits of clinical application are, therefore, restricted to those effects which occur prior to the violent muscular activity. The desired stage can be attained by administering methylene chlorid to a point at which consciousness is lost. Administration of the drug is then discontinued, but on the first sign of return of consciousness it is renewed, so that by a process of intermittent administrations the pain of many procedures may be alleviated. The authors recommend its use for the relief of the pains of labor in which the contractions of the uterus do not seem to be impaired, for the induction of anesthesia prior to the use of other less agreeable anesthetic agents, in all minor surgical procedures, for painful dressings, and particularly in dentistry for the extraction of teeth and the preparation of painful cavities.

Gonococcus Arthritis in New-Born Child.—Ross' patient developed an acute gonococcal arthritis eighteen days after birth. The father had gonorrhea just before marriage. The mother, who had previously been healthy, developed a vaginal discharge during this, her first pregnancy. One week postpartum she developed a multiple arthritis which was diagnosed as gonococcal. The infant was healthy at birth. It was reported that the eyes were treated with silver nitrate. On the fifth day there was a mucopurulent discharge from the right eye, with slight conjunctivitis. This was treated by boric acid irrigations and cleared up within a week. On the eighteenth day the temperature rose to 101 F. at 8 a. m. The infant cried loudly, especially on being moved, and on this day the temperature rose to 101.2 F. It was noticed that the right wrist and hand were definitely swollen. The overlying skin was hot, tense and slightly cyanotic, and on palpation there was definite tenderness especially in the metacarpal region. No fluctuation was present. On the following day, the hand was more swollen especially along the tendon sheaths in the metacarpal region. There was also swelling of the left knee joint with definite fluctuation, especially in the suprapatellar bursa. The skin over the knee was reddened and hot. The temperature was normal. The knee joint was aspirated in the suprapatellar region and several cubic centimeters of frank greenish pus was obtained. A smear of this showed numerous pus cells, but no organisms. The pus was cultured. The bacteriologist reported that a gram-negative diplococcus of the morphology of the gonococcus had been grown from the pus. The organism was

later proved to the gonococcus by its cultural characteristics. Later it became necessary to open the knee joint. Recovery ensued eventually.

Johns Hopkins Hospital Bulletin, Baltimore

34: 173-204 (June) 1923

Increasing Significance of Permeability Problems. H. J. Hamburger, Groningen, Holland.—p. 173.
*Distribution and Excretion of Arsphenamin After Intravenous Injection. A. C. Kolls and J. B. Youmans, Baltimore.—p. 181.
*Carcinoma of Cervix Uteri. Relative Malignancy of Neoplastic Process as Indicated by Predominant Type of Cancer. K. H. Martzloff, Baltimore.—p. 184.
Phrenic as Nerve of Motor Innervation of Diaphragm. K. Schlaepfer, Baltimore.—p. 195.
Blind End-to-End Anastomosis of Sigmoid. Modified Halsted Operation. New Instrument. C. Y. Bidgood, Baltimore.—p. 197.
Study of Influence of Chemicals on Erythrocyte Membranes by Changes in Corpuscular Volume. B. S. Neuhausen and J. E. Breslin, Baltimore.—p. 199.

Fate of Arsphenamin After Intravenous Injection.—Kolls and Youmans found that approximately three fourths of the arsphenamin injected leaves the blood stream in a few minutes after the completion of the injection. The remaining portion is rapidly reduced in amount, but traces may be found twenty-four hours later. The drug is stored in the liver, spleen, kidneys, lungs, cardiac and skeletal muscle. There is evidence that the alteration or excretion (or both processes, perhaps) has appreciably reduced the amount of the drug three hours after injection. The liver is a more important excretory organ for arsphenamin and neo-arsphenamin than the kidney. The brain shows a much lower concentration of drug in the experimental animal than does any other organ. The cerebrospinal fluid, during the first twenty-four hours, if it contains the drug at all, does so only in minute concentration, which is too low for accurate estimation.

Carcinoma of Cervix Uteri.—Martzloff's study is too detailed to be abstracted, but a few points may be selected for emphasis. The vaginal mucosa was involved in over 50 per cent. of all carcinomas of the cervix in this series, irrespective of the extent of the cervical involvement. Secondary involvement of the corpus uteri in cervical cancer occurred in 41.3 per cent. of the cases in which the entire length of the cervix was involved. One third of all patients seen during the first six months of symptomatic disease, with the exception of those suffering from the spinal cell type of cancer, had extension of the neoplastic process to the broad ligament. Less than 10 per cent. of the patients with broad ligament involvement lived more than one year after operation. The first symptom of disease in almost 85 per cent. of the cases studied was some form of unusual vaginal discharge (either bleeding or leukorrhea) was the primary symptom. The incidence of "cures" is almost twice as frequent in the cases treated by abdominal panhysterectomy as compared with those in which a vaginal panhysterectomy was performed. The incidence of so-called "five year cures" is 26.6 per cent.

Journal of Experimental Medicine, Baltimore

38: 1-115 (July) 1923

*Bacteriostasis by Mixture of Dyes. J. W. Churchman, New York.—p. 1.
Mutation Among Hog Cholera Bacilli. M. I. Orcutt, Princeton, N. J.—p. 9.
Pathogenesis of Ocular Lesions Produced by Deficiency of Vitamin A. A. M. Yudkin and R. A. Lambert, New Haven, Conn.—p. 17.
*Changes in Para-Ocular Glands Accompanying Ocular Lesions Which Result from Deficiency of Vitamin A. R. A. Lambert and A. M. Yudkin, New Haven, Conn.—p. 25.
Microbic Virulence and Host Susceptibility in Paratyphoid-Enteritidis Infection of White Mice. I. L. T. Webster, New York.—p. 33.
Id. II. L. T. Webster, New York.—p. 45.
*Effect of Sodium Chlorid on Chemical Changes in Blood of Dog After Pyloric and Intestinal Obstruction. R. L. Haden and T. G. Orr, Kansas City, Kan.—p. 55.
Soluble Specific Substance of Pneumococcus. M. Heidelberger and O. T. Avery, New York.—p. 73.
Immunologic Relationships of Cell Constituents of Penumococcus. O. T. Avery and M. Heidelberger, New York.—p. 81.
*Influence of Suprarenal Cortex on Gonads of Rabbits. I. Effects of Suprarenal Injury (by Removal or Freezing) on Interstitial Cells of Ovary. H. L. Jaffe and D. Marine, New York.—p. 93.
*Id. II. Effects of Suprarenal Injury (by Removal or Freezing) on Tubules and Interstitial Cells (Leydig) of Testis. H. L. Jaffe and D. Marine, New York.—p. 107.

Bacteriostasis by Mixture of Dyes.—Churchman established by experiments with a mixture of gentian violet, which has a predilection for gram-positive organisms, and acriflavine, which has a predilection for gram-negatives, that it is possible to mix two dyes of opposite selective bacteriostatic powers and obtain a mixture which combines the powers of the two components. The weakness of each dye, when used alone, is thus, in the mixture, fortified by the strength of the other. If the two dyes, gentian violet and acriflavine, be mixed together in equal quantities in a mortar and dissolved in water in a strength of 1:2,000 of the mixture, a plum-colored solution results. This solution is absolutely non-irritant for inflamed human mucous membranes (urethral). In laboratory experiments it is bacteriostatic for all the common aerobic organisms. From the clinical tests on a small series of cases of genito-urinary infections in which the mixture has been used it seems probable that greater success can be obtained from it than from either dye alone.

Ocular Lesions Caused by Deficiency of Vitamin A.—Lambert and Yudkin present evidence suggesting that the ophthalmia which results from a deficiency of vitamin A is secondary to some change outside the eyes, and that this change may lie in the para-ocular glands. In rats these glands consist of the lacrimal, with its watery secretion, the harderian, with a probable fatty product, and the meibomian glands. A histologic study of these structures shows questionable changes in the lacrimal and meibomian glands, and marked changes in the harderian gland. The changes demonstrated indicate a serious disturbance in the secretion of the harderian gland, such as may conceivably render the conjunctiva susceptible to infection.

Effect of Sodium Chlorid on Blood in Intestinal Obstruction.—Experiments to determine the effect on the toxemia of pyloric and intestinal obstruction by furnishing an ample supply of sodium chlorid are reported by Haden and Orr. A fall in blood chlorids is the first and seemingly most significant change to take place. The chlorid is apparently utilized by the body as a protective measure against the primary toxic substance. Two dogs with pyloric obstruction were given 50 c.c. of a 10 per cent. sodium chlorid solution subcutaneously daily. One dog lived three days, the other four days. The blood showed little change, except a marked terminal rise in chlorids. Animals given a like amount of distilled water, or 25 per cent. glucose solution, showed the changes typical of untreated animals. The obstruction of the pylorus was released in six dogs from forty-eight to seventy-two hours after the initial operation. Two dogs died within twenty-four hours after the second operation with a high nonprotein nitrogen blood content. Two dogs survived but showed a high level of nonprotein nitrogen and a high nitrogen excretion in the urine, low blood chlorids and a marked alkalosis. One dog in such a state died on the thirteenth day. Dogs given an abundant supply of distilled water died more quickly than untreated control animals. Solutions of glucose have no specific value, and sodium bicarbonate solutions prolong life only a short while. Good therapeutic results have been obtained with very concentrated sodium chlorid solutions, and with dry sodium chlorid given by mouth. It seems evident that sodium chlorid has a specific action in preventing and possibly in controlling the changes produced by the toxic body. Apparently sodium chlorid is a valuable therapeutic agent in pyloric and high intestinal obstruction.

Effect of Suprarenalectomy on Interstitial Cells of Ovary.—Moderate or marked ovarian enlargement has been observed by Jaffe and Marine in 76 per cent. of rabbits which survived double suprarenalectomy more than thirty days. The ovarian enlargement consists essentially of an hypertrophy of the interstitial cells. This hypertrophy is a compensatory reaction and adds further data to the functional interrelation between the suprarenal cortex and the interstitial cells.

Effects of Suprarenalectomy on Testis.—Double or partial suprarenalectomy in rabbits produces no specific changes either in the tubules or in the interstitial cells of the testes. This is in sharp contrast with the marked hypertrophy of the interstitial cells of the ovary which usually occurs in rabbits surviving double suprarenalectomy thirty days or more.

These facts, Jaffe and Marine assert, indicate that the interstitial cells of the testis and ovary are not functionally homologous.

Journal of Industrial Hygiene, Boston

5: 81-108 (July) 1923

Results of Limited Mercantile Industrial Work. D. C. Parmenter.—p. 81.
Metal-Fume Fever. F. Koelsch.—p. 87.
Relation Between Labor Turnover and Industrial Accidents. H. D. Kitson and C. Campbell.—p. 92.
Tests for Hydrocyanic Acid Gas in Air. S. H. Katz and E. S. Longfellow.—p. 97.

Laryngoscope, St. Louis

33: 401-482 (June) 1923

Roentgen-Ray Study of Intubation. E. Giddings and D. E. Ehrlich, New York City.—p. 401.
Giant Cell Sarcoma of Auditory Canal Complicating Mastoiditis. W. Herbert, Brooklyn.—p. 415.
Ethmosphenoidal Sinusitis. J. H. Harter, Seattle.—p. 417.
Bacteriology of Infected Nasal Accessory Sinuses. W. E. Cary and E. McGinnis, Chicago.—p. 424.
Case of Status Lymphaticus with Necropsy Findings. C. L. Stone, Brooklyn.—p. 426.
Case of Ivory-Like Osteoma Originating from Os Planum and Invading Orbit. H. H. Vail, Cincinnati.—p. 428.
Throat and Ear Symptoms in Rheumatic Cases. D. MacFarlan, Philadelphia.—p. 436.
Blood Clot Dressing in Mastoidectomy. G. E. Davis, New York.—p. 442.
Surgical Control of Bleeding Following Tonsillectomy. J. J. Rainey, Troy, N. Y.—p. 446.
New Suction Tongue Depressor. W. M. Hunt, New York.—p. 454.
New Pharyngeal Suction Tube. M. C. Myerson, Brooklyn.—p. 455.
Tonsil Needle. L. M. Hurd, New York.—p. 456.

New York Medical Journal and Medical Record

117: 721-780 (June 20) 1923

Immunologic Classification of Common Hay-Fever Plants and Trees. W. Scheppegrell, New Orleans.—p. 721.
Bronchial Asthma and Hay-Fever, with Special Reference to the Treatment of Nonspecific Cases. M. A. Ramirez, New York.—p. 727.
*Bronchial Asthma Due to Mice. W. Lintz, Brooklyn.—p. 729.
Psychology of Hay-Fever. J. P. De River, San Francisco.—p. 730.
Tonsillectomy: Electric Coagulation and Desiccation. A. M. MacWhinnie, Seattle, Wash.—p. 731.
Industrial Eye Injuries. F. Allport, Chicago.—p. 733.
*Analysis of Twenty-Nine Cases of Uremia. H. M. Feinblatt, Brooklyn.—p. 737.
Standard Treatment for Malaria. C. C. Bass, New Orleans, La.—p. 740.
Retinitis Associated with Disease of Cardiovascular System. W. L. Benedict, Rochester, Minn.—p. 741.
Subacute Bacterial Endocarditis. J. Barsky, New York.—p. 746.
Hypertension with Especial Reference to Prognosis. J. T. Ullom, Philadelphia.—p. 753.
Examination of Heart for Life Insurance. F. W. Price, London.—p. 754.
Miraculous Herbs: Psychologic Problem in Ethnology. J. Wright, Pleasantville, N. Y.—p. 758.

Bronchial Asthma Due to Mice.—Lintz reports a case of bronchial asthma in which a mouse caused the attacks. The history was typical and the findings characteristic of this disease. While it was easy to establish the diagnosis, it was exceedingly difficult to establish the cause. All laboratory examination, all cutaneous allergic tests proved negative. One day while examining the patient's premises, Lintz was struck by the number of mousetraps scattered through the house and store. The place was infested with mice and rats. Then it occurred to Lintz that the patient's asthma might be due to these rodents for the following reasons. (1) The attacks of asthma occurred during the period from December to March, when these rodents leave the fields and enter the house for food and warmth. (2) They occurred usually at night, when the rodents prowl about. (3) When she stayed at her mother's home, a place free from rodents, she was free from the attacks. When she returned to her own home, a place infested with rodents, the attacks occurred. (4) If she lay down in her bedroom, she had an attack. (5) By exclusion, all other investigations were negative. All the cutaneous tests were negative. Exposure to the odor of a mouse provoked a very severe and typical picture of asthma in three minutes. After the removal of a few dead rats from beneath the boards of her bedroom floor, the patient was free from attacks of bronchial asthma for three years.

Blood Chemistry of Uremia.—As regard blood chemistry, urea nitrogen was found by Feinblatt to furnish the most reliable index to the progress of these cases and to bear the greatest prognostic value. Increases to figures of 300 mg. per hundred cubic centimeter invariably portended death in a few days. Uric acid was very variable, and, while always increased, maintained no ratio with the urea nitrogen. Creatinin tended to rise in the same proportion with the urea nitrogen. The study of etiologic factors would indicate that heredity, sex, and occupation are not important predisposing causes. The most important underlying renal condition responsible for uremia was chronic glomerular nephritis, being present in twenty-two instances. Acute glomerular nephritis was accountable for only one case of uremia. Tonsilitis and scarlatina were the most frequent antecedent infections. The symptomatology revealed a surprising similarity to nephrectomized animals and to instances of total deprivation of renal function in man. Drowsiness, gradually merging into coma, vomiting, edema, dyspnea, increased tendon reflexes, restlessness, and headache stood highest in frequency. Concurrent cardiac decompensation is undoubtedly responsible for the edema and dyspnea in many instances. Eclamptic evidences were infrequent. Convulsions occurred only three times and always just before death. The urine showed evidence of nephropathy in every case. A moderate grade of secondary anemia was present in the majority of cases. The Wassermann reaction was positive in only three of the twenty-three cases. Cardiac hypertrophy was positively determined in eighteen cases; arteriosclerosis, in eight. The average systolic blood pressure was 168; diastolic, 108. Myocardial insufficiency was the most important complication. It was directly responsible for death in three cases.

Oklahoma State Medical Association Journal, Muskogee

16: 180-211 (June) 1923

Forward Look in Medicine. H. T. Ballantine, Muskogee.—p. 181.
Radium as an Adjunct to Surgery in Uterine Conditions. W. P. Fite, Muskogee.—p. 182.
Dermatologic and Radiologic Observations. C. H. Ball, Tulsa.—pp. 185.
Case of Chronic Intestinal Obstruction. D. D. Paulus, Oklahoma City.—p. 187.

Public Health Journal, Toronto

14: 243-290 (June) 1923

Certain Features of Child Welfare Not Sufficiently Emphasized. A. Brown.—p. 243.
Fundamentals in Planning Small Community Hospitals. B. E. Parry.—p. 250.
Health Work Among Students. G. D. Porter.—p. 261.
Psychanalysis. J. W. Bridges.—p. 272.
Mental Defect as Factor Instability. G. Hamilton.—p. 279.

Rhode Island Medical Journal, Providence

6: 83-98 (June) 1923

Tuberculosis of Upper Air Passages. L. B. Porter, Providence.—p. 83.
Pyorrhea: Its Cause and Treatment. M. L. Mullaney, Providence.—p. 86.
Convergent Squint in Children. J. W. Leech, Providence.—p. 90.

Southwestern Medicine, Phoenix, Ariz.

7: 185-220 (June) 1923

Present Status of Surgery of Gastroduodenal Ulcer. A. B. Cooke.—p. 185.
Paroxysmal Tachycardia. G. Werley, El Paso, Tex.—p. 187.
Cardiac Arrhythmia. D. B. Hamilton, Kansas City, Mo.—p. 191.
Use of Epinephrin and Pituitary Extract in Proctoclysis. R. A. Hernandez, Tucson, Ariz.—p. 198.
Hernia Under Local Anesthesia. B. F. Stevens, El Paso, Tex.—p. 200.
Roentgen-Ray in Diagnosis of Urologic Conditions. W. R. Jamieson, El Paso, Tex.—p. 202.

Tennessee State Medical Association Journal, Nashville

16: 41-80 (June) 1923

Lesions of Stomach. E. S. Judd and J. H. Lyons, Rochester, Minn.—p. 41.
Relationship Which Should Exist Between Public Health Laboratories and Clinical Laboratories. W. Krauss, Memphis.—p. 46.
Hay-Fever. J. B. Hibbetts, Nashville.—p. 48.
Ten Cases of Tetanus. M. B. Davis, Nashville.—p. 55.
"Headaches" due to Closure of Outlet of Frontal Sinus. J. A. Hughes, Memphis.—p. 59.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

20: 65-128 (June) 1923

Treatment of Acute Otitis Media in Children. T. B. Layton.—p. 65.
*Banti's Disease: Differentiation from Other Types of Splenomegaly and Relation to "Idiopathic" Nonalcoholic Progressive Hepatic Cirrhosis in Children and Young Persons. F. P. Weber.—p. 78.
Classification of Blood Disease in Childhood. G. Ward.—p. 84.
*Case of Celiac Disease Showing Symptoms of Megalocolon with Necropsy. R. Miller.—p. 88.
*Localized Peritonitis Due to Intestinal Perforation in Paratyphoid Fever: Operation; Recovery. A. E. M. Woolf.—p. 91.
Meningeal Form of Typhus in Children. MM. Gratzosky, A. Stroe and E. Cocias.—p. 95.

Progressive Hepatic Cirrhosis in Children.—Under the caption "idiopathic nonalcoholic progressive hepatic cirrhosis" Weber describes a disease in which the liver is usually mainly affected, but in which splenomegaly may precede any sign of hepatic disease or both the spleen and the liver may early be enlarged. The "splenic" variety of this disease, in which the spleen is first and most obviously affected, he regards as being probably the same as "Banti's disease," if the latter term be restricted to the cases of chronic splenomegaly remaining after the exclusion of all other forms of splenic enlargement. Idiopathic nonalcoholic progressive hepatic cirrhosis, according to this view, is a disease which commences insidiously in childhood, but may not be recognized till much later in life, especially if the changes are almost confined to the liver. Ultimately, however, edema of the ankles, ascites, and possibly attacks of hematemesis, jaundice and signs of hepatic insufficiency supervene. Weber suggests that some of the cases formerly were regarded as alcoholic "essential" group. He suggests, further, that in children some of the cases of splenomegaly with recurrent jaundice ending in hepatic cirrhosis and ascites are really examples of the same disease, but with early splenic predominance—even when a positive Wassermann reaction is obtained; the positive reaction, however, in such cases suggests that the splenic and hepatic changes may be "on a basis of congenital syphilis." In most cases both the spleen and the liver are early enlarged; in some cases the spleen more than the liver, in other cases the liver more than the spleen. The cases of Hanot's "biliary type" of hepatic cirrhosis in children and young persons, which are sometimes associated with great splenomegaly and are occasionally accompanied by general infantilism, may be examples of the same idiopathic hepatic cirrhosis, in which the cirrhotic change especially affects the minute bile ducts. Very rarely more than one member of a family has been affected by hepatic cirrhosis in childhood of Hanot's biliary type or of the ordinary type. If this view of nonalcoholic progressive hepatic cirrhosis be correct, splenectomy can be expected to be of use only in cases in which the morbid process is located mainly in the spleen (the cases of "splenic predominance") that is, in the cases of "splenic anemia" or "Banti's disease," in which, apparently, it has repeatedly been found of great value.

Celiac Disease with Symptoms of Megacolon.—Miller relates the case of a boy who died at the age of 6 years, who was admitted to hospital as an ordinary case of celiac disease. His stools were typical, and on an ordinary diet contained 36 per cent. of fat. At that time it was specially noted that the colon was greatly distended, but that no peristalsis was visible. He was put on a modified low fat diet, but his diarrhea continued. Two months later he was readmitted, and for a period of six weeks very marked peristalsis of his colon was observed. The bowel appeared greatly distended: it held 75 ounces of saline solution without discomfort and by skiagram an opaque enema showed that the sigmoid loop passed right across the lower abdomen to the right iliac fossa. He was treated by lavage of the colon. Later he was admitted for a third time. The colon was then much distended, but no peristalsis was observed. His stools contained 60 per cent. of fat, dropping to 36 per cent. At this time he developed urinary obstruction due to a calculus impacted in his urethra, and thereafter showed infection of his urinary tract. Three months later, he was readmitted unconscious and dyspneic, and died in a few hours. The necropsy disclosed omental fat in large quantities. The intestines appeared heavy, due partly to fat and partly to edema. The colon was of normal size throughout, with the exception of one portion about 2½ inches in length which was dilated to a width of a little more than 2 inches. No chronic enteritis nor other organic cause for the chronic fatty diarrhea could be found. Miller suggests that this condition may be originated by the fat indigestion of celiac disease, in which disorder the distention may reach such a grade as to produce partial obstruction by kinking with consequent peristalsis.

Perforation of Intestine in Paratyphoid Fever.—Woolf is of the opinion that this is the first case of paratyphoid B fever perforation. The diagnosis was confirmed serologically. The perforation occurred in the lower end of the ileum. The omentum was brought over the site of the perforation and a tube was inserted. Recovery was uneventful.

British Journal of Ophthalmology, London

7: 305-352 (July) 1923

Binocular Choroidal Tuberculosis with Detachment of Retina in Two Kittens. J. B. Lawford and H. Neame.—p. 305.
Cases of Ophthalmologic Interest from Postmortem Records of St. George's Hospital. R. R. James.—p. 313.
One Hundred Cases of Cataract Removed Under Subconjunctival Bridge. C. Killick.—p. 320.
Experiment on Visual After-Sensation in Reference to Illumination in Coal Mines Carried out by National Institute of Industrial Psychology. E. Farmer.—p. 328.
Vision of Railway Servants. J. Barrett.—p. **329.**

British Medical Journal, London

2: 1-50 (July 7) 1923

*Experimental Inquiry into Causes of Cancer. A. Leitch.—p. 1.
Surgery of Hepatic and Common Bile Ducts. W. J. Mayo.—p. 7.
Cases Illustrating Methods of Diagnosis in Renal Surgery. F. S. Heaney.—p. 8.
*"Defatting" of Acid-Fast Bacilli of Leprosy and Tubercle by Injections of Chaulmoogrates and Morphuates. L. Rogers.—p. 11.
*Fifty Cases of Carcinoma of Cervix Treated with Radium. M. Donaldson.—p. 12.
*Tongue Symptom in Abdominal Sepsis. P. C. Fenwick.—p. 16.
Treatment of General Paralysis by Tryparsamid: Penetration of Drug into Cerebrospinal Fluid. F. W. Mott.—p. 24.

Cause of Cancer.—Leitch discusses several different agents which have been shown to be capable of producing cancer in animals; all are of an irritating nature, being foreign to the cells of the body, and invoking in them the familiar response—proliferation and increased cellular activity. Evidence derived from experimental inquiry into the causes of cancer has not only brought support to the doctrine that cancer follows chronic irritation, but has also very considerably narrowed the issues by demonstrating that certain irritants are very potent agents in producing tumors, whereas others have not been found to possess carcinogenic properties, the term Leitch has devised. The irritant is, therefore, in a sense specific; it evokes a response in the cells which is at first similar to that aroused by other stimuli, but later, on account of its peculiar nature, leads to the anarchic and progressive proliferation termed cancer. The evidence is that certain irritants easily produce cancer, while others do not. A second fact which the experimental study of cancer has brought to light is that the specific irritant produces cancer only in certain animals, and only in the susceptible tissues of these animals. Another important fact made clear by the experimental studies Leitch passes in review is that a considerable space of time may elapse between the action of the irritant and the appearance of the neoplasm. A careful study of human cancer has often failed to reveal any recent antecedent irritation, but sufficient consideration has not been given to the possibility that a bias toward malignancy may be imparted to cells by some previous, and even long previous, irritation. Experiment has shown that cancer is not essentially a disease of ageing tissue; the reason why it occurs more frequently with advancing years is capable of another explanation than that the cells are manifesting senile changes. The essential point may be the length of time the causal agent is in operation. Since in most instances this requires a protracted period, it becomes obvious why cancer is usually a disease of middle or old age. To the pathologist it is of great interest

to notice that after the application of paraffin to mice, in some cases carcinoma and in other cases sarcoma developed in approximately the same time. Thus, two very different kinds of tumor can be produced by the same agent, according to whether the irritant substance affects chiefly the epithelial or connective tissue cells. All that is claimed for these tumor producing agents is that they bring about a pathologic state of the tissues, and that on this prepared soil the undetermined causal agent of cancer can then exert its action. The fact that after a tar epithelioma has been extirpated from a mouse, subsequent applications of tar do not induce further tumor is an observation which may prove to be of great practical importance. This suggests that the occurrence of one form of cancer in an individual "protects the body in some way against the occurrence of another." Leitch warns against hasty conclusions from these experiments.

"Defatting" of Acid Fast Bacilli.—Rogers has made studies on the subject of the blood lipases of lepers, some who were and some who were not treated with chaulmoogrates and morrhuates. Results obtained in leprosy appear to support the view that this class of preparation acts by increasing the blood lipase, which, in turn, dissolves the fatty coating of the acid-fast bacilli of leprosy, and probably also of tuberculosis, setting free the antigens, with resulting production of immunity in leprosy, and possibly also in tuberculosis. In the latter disease, however, it is more difficult in pulmonary affections at any rate to control the process with sufficient accuracy to prevent too great liberation of toxins. In other words, Rogers appears to have obtained in leprosy, and possibly in surgical tuberculosis, "defatting" of the causative bacteria in vivo.

Radium Therapy of Carcinoma of Cervix.—The clinical experiences of Donaldson and Canti in this field are in accord with the general experience of others in recent years, that in the majority of cases patients suffering from carcinoma of the cervix cease to have hemorrhage, vaginal discharge, and ulceration after treatment with radium. Further, that in some of those cases which are inoperable, life is prolonged. It would be premature at the present juncture to talk of cures. The preliminary application of radium in those cases which are operable causes the disappearance of fungating growths of ulcers, so that the risk of infection and implanting new growth from the cervix at the time of incising the vaginal wall is markedly diminished. There is no doubt that the application of 173.6 mg. of radium element for twenty-four hours is more efficient in bringing about this result than the same amount applied for eight hours, even when the latter is given on as many as three occasions.

Tongue Symptom in Abdominal Sepsis.—A definite odor from the tongue, not from the breath, is regarded by Fenwick as a positive sign of pus in the abdominal cavity. The smell varies from the distinct smell of pus to an actual fecal odor. This sign is interpreted as an indication of the rapidity of absorption from the peritoneum.

Edinburgh Medical Journal

30: 233-264 (June) 1923

Lupus Erythematosus. F. Gardiner.—p. 233.
Osteogenesis Imperfecta Affecting Two Generations. H. J. C. Gibson.—p. 237.
Dislocation of Semilunar Bone. H. A. Lediard.—p. 244.
Some Ancient Mineral Wells in Scotland. W. G. A. Robertson.—p. 246.
Osteochondritis Deformans. Juvenile Schlatter's Disease and Other Allied Conditions. J. N. J. Hartley.—p. 254.

Indian Medical Gazette, Calcutta

58: 241-286 (June) 1923

Glucose Tolerance Tests and Their Interpretation. J. P. Bose.—p. 241.
Plea for Inception of Mental Hygiene Movement in India. O. A. R. B. Hill.—p. 242.
Cholelithiasis and Its Significance. V. N. Whitamore.—p. 244.
Obstetric Impressions. J. M. Dass.—p. 246.
Vitreous Escape in Intracapsular Extraction of Cataract in Prominent Eyeballs or Fat Patients. H. Shanker.—p. 251.
Gonorrhea of Female Genital Organs and Its Management. T. J. Doederlein.—p. 251.
Use of Germinated Pulse and Beans in Natural Dietary of Burmese. G. G. Jolly.—p. 255.
*Value of Essential Oils in Prevention and Treatment of Cholera. J. W. Tomb.—p. 257.
Improvement of Poona Water Supply by Simple Storage. J. L. Pinto.—p. 259.
Myiasis of Frontal Sinus. R. E. Wright.—p. 259.
Case of Raynaud's Disease. S. L. Sarkar.—p. 260.
*Case of Absence of Left Lung. K. S. N. Muhamed.—p. 262.
Five Consecutive Cases of Tetanus Ending in Recovery. R. S. Tembe.—p. 262.
Case of Hydatid Cyst of Liver. S. Banerjea.—p. 263.
Case of Abdomen Punctured by Broken Bottle. L. W. Hefferman.—p. 264.

Essential Oils in Treatment of Cholera.—The mixture used by Tomb consisted of spirits of ether, 30 minims, oil of cloves, oil of cajuput and oil of juniper, 5 minims of each, and aromatic sulphuric acid, 15 minims. The dose was 1 dram, in one-half ounce of water, every half hour, until vomiting and purging ceased. For contacts, 1 dram in water, was given once (or twice) daily for one or two days. The mixture has been administered to several hundreds of contacts, and in none has cholera developed. The mixture possesses considerable advantages over cholera vaccine as a prophylactic from an administrative point of view, for whereas vaccination is costly and unpopular, the mixture is both cheap and pleasant to take. The curative value of the mixture, in all stages of the disease short of collapse, is also not to be lost sight of, the death rate of those treated being 16.6 per cent.

Absence of Left Lung.—In Muhamed's case the right lung covered the heart and extended to the left side of the chest. A very thick pleura, about one-third inch thick, lined the upper part of the left side of the cavity of the chest, but there was no left lung. The trachea entered the right lung directly without division. A bilobular glandular structure on the left side of the cavity was found on microscopic examination to be the thymus gland, but there was also present a prominent second thymus gland in its usual place in the anterior mediastinum. The woman had lived for nineteen years with only one lung, and appeared to have suffered no inconvenience.

Indian Medical Record, Calcutta

63: 141-172 (June) 1923

Dysenteries in Bengal: Their Diagnosis and Treatment. P. Ganguli.—p. 141.
Vaginal Plugging in Antipartum Hemorrhage. J. C. Chatterjee.—p. 144.
Mycetoma of Right Foot. D. N. Ghosh.—p. 144.
Rôle of Vitamin in Health and Disease. A. K. M. A. Waheb.
Dyspepsia and Its Self-Treatment. J. Ganguli.—p. 147.
*Prevention and Treatment of Plague. P. Gupta.—p. 153.

Iodin Treatment of Plague.—During a recent plague epidemic, Gupta inoculated 503 persons with plague vaccine. Out of these, nine persons were attacked with plague, and seven recovered. The two deaths were of persons who received the preventive inoculation too late. The treatment employed by Gupta consisted of the use of brandy, musk, etc., internally; belladona locally for inflamed glands, and the intravenous injection of tincture of iodin, 10 c.c. of a 10 per cent. aqueous solution.

Lancet, London

2: 1-52 (July 7) 1923

Diagnosis and Treatment of Cerebral Syphilis. G. Riddoch.—p. 1.
Secondary Operations on Biliary System. B. Moynihan.—p. 4.
*Stone in Common and Hepatic Ducts. J. Sherren.—p. 7.
*Glandular Fever and Infective Mononucleosis: Account of Epidemic. H. L. Tidy and E. C. Daniel.—p. 9.
*Trauma as Possible Cause of Brain Tumor. E. S. Reynolds.—p. 13.
Two Cases of Lethargic Encephalitis with Scarlatinal Desquamation. J. Lumb.—p. 14.
Helminth Survey of Gurkha Battalion. R. C. Watts.—p. 15.
*New Word for "Defatted" Vaccines. G. Dreyer.—p. 40.

Stone in Common and Hepatic Ducts.—Sherren does not believe that stones, except certain rare pigment calculi associated with disease elsewhere, form primarily in the ducts. They may, however, increase in size and in number when infection is present and extend in a continuous column from the ampulla of Vater to the liver and even fill the intrahepatic ducts. It follows, therefore, that if stones are found in the common duct after a previous operation for gallstones, they must have reformed in the gallbladder, if this was left, or have been overlooked. Treatment consists in removing the stones and carrying out cholecystectomy to prevent further stone formation. In cases of obstructive jaundice and cholangitis, it is unwise to operate in this stage unless forced so to do. The patient should be watched for a day or two, except in those cases with rigors, when immediate operation is

necessary. While waiting, saline and glucose should be given per rectum. If the jaundice persists, making operation imperative, it is well to do it in two stages; it is safer and stones are less likely to be overlooked. If the gallbladder is distended and the cystic duct patent, cholecystotomy should be carried out; if not, temporary drainage of the common duct, with removal of such stones as present, is indicated. At the second operation cholecystectomy is done, the stones are removed, and the ducts are thoroughly examined in a way that is unwise in deeply jaundiced, ill patients.

Glandular Fever.—Tidy and Daniel had an opportunity to study twenty-five cases of glandular fever occurring during an epidemic in a boy's school. They are convinced that glandular fever is a clinical entity and that it and the condition described as infective mononucleosis are identical. Recovery is permanent, and there is no relation to leukemia, Hodgkin's disease, or tuberculosis. There is no evidence that sepsis is a cause of absolute lymphocytosis.

Trauma as Cause of Brain Tumor.—Reynolds reports two cases of brain tumor in which there had been a trauma previous to the development of tumor symptoms. One man had a fall on the back of the head while skating; he was stunned for a time, but not definitely unconscious. Two years afterward he began to experience pain at the back of the head with some giddiness. Then his right foot would not quite respond to his will and he could not write as well as usual. He became unsteady in gait and had acute pain at the back of the head; then found a difficulty in pronouncing words and in clear articulation. He had no vomiting. A diagnosis of tumor of the middle lobe of the cerebellum was made. A soft myxoglioma, the size of an average walnut, was found in the middle lobe of the cerebellum, three fifths of it being to the right and two fifths to the left of the middle line. The second patient had been knocked down by a motor car and received bruises on the right hip and right side of the head; he was stunned but able with assistance to get home. He complained of tingling and numbness of the left side of the body and limbs with some headache. A full examination, including the optic disks, revealed no abnormal physical signs and no loss of sensation could be detected. The left hemiplegia slowly became worse with hemi-anesthesia, immobile pupils and double optic neuritis. A soft gliosarcoma was found in the right optic thalamus and invading the internal capsule.

Diaplyte Vaccines and Antigens.—Dreyer proposes to substitute for the term "defatted" vaccines a more appropriate one, "diaplytes." He proposes to speak of "diaplyte vaccines" or "diaplyte antigens" and in the process of their preparation he describes the acetone used as being the "diaplytic agent."

Medical Journal of South Africa, Johannesburg

18: 247-256 (May) 1923

Case of Intra-Ocular Cysticercus Cellulosae. A. Verwey.—p. 250.
General Anesthesia in Relation to Dental Surgery. B. Weinbren.—p. 252.
Disseminated Sclerosis with Intercurrent Congestive Attack, Probably Result of Arterial Spasm. O. K. Williamson.—p. 255.

South African Medical Record, Cape Town

21: 241-264 (June 9) 1923

Diffraction in Biologic Structures. I. Structure of Colonies of Coli-Typhoid Group. A. Pijper.—p. 243.
Tumor of Pituitary. J. C. G. MacNab.—p. 248.
Mental Disorders Which May Be Regarded as Preventable. J. M. Moll.—p. 252.

Annales de l'Institut Pasteur, Paris

37: 443-545 (May) 1923

*Vaccine Virus and Cancers. C. Levaditi and S. Nicolau.—p. 443.
Typhoid Infection and Vaccination in Fowls. C. Truche.—p. 478.
Contagious Pustular Stomatitis in Lambs. M. Aynaud.—p. 498.
*Search for Antibodies in Caterpillars. S. Métalnikov.—p. 528.
*The Teeth as Portal of Entry for Tuberculosis. J. Mendel.—p. 537.
*Vaccination Against Rabies. J. Viala.—p. 543.

Vaccine Virus and Neoplasms.—The experiments with transplantable rat and mouse cancers inoculated with vaccine virus showed that the embryonic origin of the tumor determined whether the virus was to be destroyed or not. Sarcomas killed it more or less completely.

Antibodies in Caterpillars.—Métalnikov remarks that immunization phenomena are not restricted to animals. He reports research on the caterpillar *Galleria mellonella*, which showed that it was incapable of developing antibodies in its blood after injection of colon, typhoid or certain other bacilli, killed by heat, although extraordinarily resistant to massive doses of micro-organisms. Very active bacteriolysins for cholera vibriones were found, and, on two out of ten occasions, complement fixation was positive with tubercle bacilli.

The Teeth as Portal of Entry for Tubercle Bacilli.—Mendel's experiments on monkeys and rabbits confirmed his assumption that a cavity in a tooth offers peculiarly favorable conditions for contamination and generalization of tuberculous infection. The disease runs an exceptionally rapid and virulent course, comparable in all respects to clinical pulmonary tuberculosis. The glands may or may not be involved. He warns of the danger of superposed infection from this source, even in persons already tuberculous.

Vaccination Against Rabies.—The report for 1922 of the Pasteur Institute at Paris has no mortality to record among the 754 applicants for treatment. This is the fifth year with no mortality; the first was 1910.

Annales de Médecine, Paris

13: 289-389 (April) 1923

*Ventricular Fluid. Cestan, Riser and Laborde.—p. 289.
*Histological Study of Bile Pigments. M. Popper.—p. 315.
*Artificial Glycuronuria as Liver Function Test. F. Schmid.—p. 328.
Tuberculous and Nontuberculous Sputum. E. Palier.—p. 359.
*Syphilis in Etiology of Diabetes. M. Labbé and H. Toufiet.—p. 367.
Roentgenologic Signs of Cancer of Spine. J. Sicard et al.—p. 383.

Physiology of the Cerebral Ventricles in Man.—Cestan, Riser and Laborde describe their technic for aspiration of fluid from the ventricles. Aspiration is necessary, since the fluid has normally no pressure in the horizontal position of the subject. Potassium iodid, sodium nitrate and methylene blue do not penetrate from the blood into the fluid, unless the choroid plexus is injured, or the secretion is strongly increased by a lumbar puncture. Ventricular fluid contains less albumin, fewer cells and more glucose than the spinal fluid. It may have a normal composition even when the cerebrospinal fluid is greatly changed (hyperlymphocytosis, hyperalbuminosis, strongly positive Wassermann reaction).

Histologic Study of Bile Pigments.—Popper studied histologically different sorts of icterus in men and animals. He found that Kupffer's cells start the formation of biliary pigments. The substances which they contain may be differentiated histologically from the pigment which appears later in other cells of the liver. The end-product, however, is contained in the small biliary ducts.

Artificial Glycuronuria as Liver Function Test.—Schmid gives the history, reviews the literature and reports his own experiences on the value of synthesis and elimination of combined glycuronic acid in affections of the liver. His opinion is unfavorable. He was able to eliminate most of the inconveniences of the test by substituting menthol for the camphor used to provoke glycuronuria. Yet the menthol test was always positive—even in severe affections of the liver, which may also happen, if the original test is used.

Rôle of Syphilis in Etiology of Diabetes.—Labbé and Toufiet review and discuss the question of a syphilitic origin of diabetes. They conclude that such cases are extremely rare.

Archives des Maladies du Cœur, Paris

16: 241-320 (April) 1923

Complementary Ventricular Complexes with Partial Branch Block. R. Lutembacher.—p. 241.
Dextrocardia. P. Meyer.—p. 249.
*Action on Blood Pressure of Suprarenal Antiserums. Bru.—p. 256.

Hypotensive and Hypertensive Action of Suprarenal Cortex and Medulla Respectively.—Bru injected dog suprarenal medulla tissue and cortex tissue intraperitoneally into rabbits. He then injected the serum of these rabbits intravenously into dogs. The effects appeared in four to five minutes and lasted for more than ten minutes. Injection of 10 c.c. of anticortex serum caused a slight lowering, injection of antimedulla serum a slight rise in blood pressure.

16: 321-400 (May) 1923

New Types of Extrasystoles with Prolonged Interval. J. de Meyer and A. Wilmaers.—p. 321.
*Orthostatic Auriculoventricular Dissociation. V. Gallemaerts.—p. 332.
*Local Formation of Lymphocytes in the Tissues. H. Bonnin.—p. 344.
Acute Malignant Endocarditis. A. Hanns and L. Masson.—p. 365.

Orthostatic Auriculoventricular Dissociation.—Gallemaerts describes a case of auriculoventricular dissociation provoked by the upright position. Atropin had no effect on the phenomenon.

Local Formation of Lymphocytes in the Tissues.—Bonnin finds that lymphocytes in the tissues are partly hematogenous, partly formed locally from indifferent mesodermic cells situated near the blood vessels. They do not change into other cells, especially into fibroblasts. He publishes pictures and an extensive bibliography.

Archives de Médecine des Enfants, Paris

26: 265-328 (May) 1923

*Sequelae of Epidemic Encephalitis in Children. Collin and Réquin.—p. 265.
Meningeal Form of Heine-Medin's Disease. Condat.—p. 279.
Acute Leukemia in Children. Condat.—p. 286.
Tumor of Liver in Infant Aged 14 Months. Condat.—p. 293.
*Pseudoleukemic Anemia and Hereditary Saturnism. P. Auban.—p. 297.

Psychic Sequelae of Epidemic Encephalitis in Children.—Collin and Réquin found that the typical psychic sequela after encephalitis in small children is mental backwardness, which may be as severe as idiocy. Disturbances of character are not marked. Children who were about 7 years old, have also arrested mental development and disturbances of character. Older children (up to 17 years) suffer from insomnia, and stereotypical actions. Mental deterioration though almost constant, is less pronounced than the changes of character.

Pseudoleukemic Anemia and Inherited Saturnism.—Auban describes a case of pseudoleukemic anemia in an infant whose mother had tried to secure abortion by taking liquor plumbi subacetatis.

Bulletin de l'Académie de Médecine, Paris

89: 547-570 (May 22) 1923

*Diagnosis of Multiple Sclerosis. C. Achard.—p. 553.
*Endoseptal Access to Sella Turcica. E. V. Segura.—p. 561.
Influence of Religions on Natality. R. Martial.—p. 565.

Diagnosis of Multiple Sclerosis from Cerebrospinal Fluid.—Achard obtained a positive reaction to the benzoin test of the cerebrospinal fluid of a woman who had had multiple sclerosis for nine years, and in twenty other cases out of a total of twenty-five, under his own or others' observation. The Wassermann test was constantly negative in all. The benzoin reaction was pronounced in some of the cases in which the clinical picture was far from complete at the time. It may prove instructive to supervise the benzoin reaction during a course of treatment, especially with spirillocidal drugs, to gage the effect. The spirochete found by Pettit and by Guillain in several cases of multiple sclerosis was never discovered outside the nervous system, even at necropsy. In discussing Achard's communication, Guillain stated that he had obtained a positive reaction to the benzoin test in the spinal fluid in 6 out of 10 cases of multiple sclerosis, but the colloidal gold and mastic reactions were positive also. It indicates a progressive lesion, and becomes negative as the progressive wave subsides.

Access to Sphenoidal Sinus and Sella Turcica Through Nose.—The six fine illustrations which accompany Segura's communication show the danger to the retrobulbar optic nerve from even slight congestion in the sphenoidal sinus. Opening the sinus may be the only means to ward off blindness. With slowly progressing retrobulbar neuritis, simple coryza aggravates the ocular disturbances. On the other hand, opening the sinus always improved the optic neuritis except when the disk had been irremediably damaged. After submucous resection of the nasal septum, he resects through a broad speculum the protruding wall dividing the two sphenoidal sinuses and the wall separating each from the nasal cavity, after detaching the mucosa. As the speculum is withdrawn, the two sheets of mucosa fit together again. In twenty-six of thirty-eight patients with retrobulbar neuritis thus treated in Argentina and seven cases in Paris the results were excellent.

89: 593-634 (June 5) 1923.

Proposed Regulation of Midwifery. Committee Report.—p. 595.
*Treatment of Detachment of the Retina. Sourdille.—p. 621.
Preponderant Rôle of Physicians in Peaceful Subjugation of Morocco. M. Desnos.—p. 624.

Treatment of Detached Retina.—Sourdille aims to induce an inflammatory reaction in the retina and choroid, after the retina has been replaced, which will anchor it in place and prevent recurrence. In sixteen patients with recent detachment treated by puncture of the retina and injection of a mercurial salt solution or puncture with the actual cautery, 6 per cent. were improved and 62 per cent. were cured entirely. In 18 cases of detachment of long standing, 22.2 per cent. were only temporarily improved but 50 per cent. were cured. The interval since has been from one to two years.

Bulletin Médical, Paris

37: 673-700 (June 9) 1923

*Cardiovascular Disease. A. Coury.—p. 679.

Present Status of Cardiovascular Disease.—This is a postgraduate lecture on hypertension, aortitis, arteritis and phlebitis.

Bulletins de la Société Médicale des Hôpitaux, Paris

47: 833-863 (June 8) 1923

*Chronic Rheumatism in a Syphilitic. Carnot and Blamoutier.—p. 833.
*Plastic Linitis. C. Achard, J. Mouzon and G. Marchal.—p. 835.
Tuberculous Meningitis Simulating Epidemic Encephalitis. M. Léon-Kindberg and J. Lermoyez.—p. 838.
Thrush in Mouth and Vulva of Adult. A. Chauffard, P. Brodin and M. Wolf.—p. 841.
Histologic Findings in Rat-Bite Fever. G. Delamare and A. Mouchet.—p. 845.
Herpes Zoster with General Eruption. Dargein, Oudard and Pervès.—p. 847.
*Tachycardia in Ex-Soldiers. Brelet.—p. 851.
Prevalence of Syphilis in 1922. Renaud and Maréchal.—p. 853.
Infectious Sore Throat with Transient General Enlargement of Lymph Glands and Mononucleosis. de Lavergne and Pilod.—p. 856.

Chronic Rheumatism in a Syphilitic.—Carnot and Blamoutier refer to a case of chronic polyarthritis with marked improvement under bismuth. They here report another case in which a woman, aged 35, long suffering intensely in every joint, was restored to a comparatively active life by arsenical treatment and massage.

Plastic Linitis.—The supposed cancer of the rectum, involving the peritoneum, proved to be a focus of plastic linitis. The linitis had developed along the digestive tract at all points where the contents move more slowly.

Irritable Heart in Ex-Soldiers.—Brelet states that tachycardia still persists in twenty-four men, notwithstanding three years of return to ordinary life, and no signs of cardiovascular or pulmonary lesions. There is nothing to indicate a thyroid origin.

Journal de Chirurgie, Paris

21: 529-672 (May) 1923

Operative Treatment of Fracture of the Malleolus. G. Picot.—p. 529.
*Modes of Access to the Pituitary. R. Leriche and Wertheimer.—p. 543.

Access to Pituitary Region.—Leriche and Wertheimer describe, with thirteen illustrations, the technic for access by the frontal or frontotemporal route and also by the submucous route through the nose and sphenoidal sinus. This last opens up a broad horizontal passage to the sella turcica. One woman thus treated was able to be up the next day. She had no headache, and soon resumed work as a seamstress. The interval since has been twenty-two months.

Journal de Radiologie et d'Electrologie, Paris

7: 97-152 (March) 1923

Radioscopy of Changes in the Humerus. Belot and Lepennetier.—p. 97.
Radiographic Pelvimetry. Chassard and Lapiné.—p. 113.
Radiography of the Cervical Spine. A. Feil.—p. 125.

Journal d'Urologie, Paris

15: 337-416 (May) 1923

*Pain in Pelvic Ureter. Rochet and Thévenot.—p. 337.
*Postoperative Hemorrhage in Kidney. A. Jianou.—p. 350.
*Urethrocele in Women. M. Lebrun.—p. 359. Cont'n.

Cancer in Kidney with Hydronephrosis and Calculi. Marion.—p. 377.
*Conservative Treatment of Phimosis. V. Doiteau.—p. 379.

Chronic Pain in Pelvic Ureter.—Rochet and Thévenot report a case in which relics of puerperal adnexitis three years before had entailed neuritis with paroxysms of pain in the pelvic ureters. The recurring spastic contraction of the ureters backed up the urine into the kidneys, and the pain induced various reflex phenomena, so that fatal uremia was impending. The right ureter was found red, with intense and repeated vermiform contractions; but it seemed to be normal otherwise. The nerve fibers on the surface, from the preureteral loop to the origin of the principal ureteral nerve, were detached from this surface with curved scissors and were resected. The relief from pain was immediate and complete. After an interval of nearly six months, the same operation had to be applied to the left ureter. The woman, aged 27, has been in good health during the three years since.

Postoperative Renal Hemorrhage.—Jianou discusses the conflicting views on the causes of hemorrhage after nephrotomy. In his experience, he could always trace them to a severed intrarenal vessel from which the clot loosened when the ligature became separated. He was always able to arrest the hemorrhage by ligating the bleeding vessel, but prefers systematic prevention. For this, he takes a series of U stitches, the small Reverdin needle passed in turn through the capsule and the mucosa of the pelvis, corresponding to the columns of Bertin. Each U stitch is tied separately. Those who hesitate to do this as a routine, may find it useful when hemorrhage occurs. Although small infarcts form, on account of the U sutures, there is no hemorrhage as hemostasis is perfect. In the case illustrated, eight U stitches had been taken on one side.

Urethrocele in Women.—Lebrun compares three personal cases with thirty-eight from the records, with operative correction in most of the cases.

Conservative Treatment of Phimosis.—Doiteau has applied the technic of which he gives an illustrated description in a number of cases in the last five years. It always proved successful; the line of suture is invaginated out of sight.

Paris Médical

13: 373-388 (April 28) 1923

Resection of Knee. F. M. Cadenat.—p. 373.
*Radiosensibility of Epithelial Cancers. A. Lacassagne.—p. 376.
*Bacterial Content of Tuberculous Suppurations. Dumont.—p. 380.
*Intraspinal Injections of Antitoxin. Benhamou et al.—p. 382.
Syphilitic Stricture of Rectum. G. Friedel.—p. 384.

Histologic Estimation of Radiosensibility of Cutaneous and Membranous Epithelial Cancers.—Though admitting in general the sensibility of basocellular and the resistance of spinocellular cancers, Lacassagne emphasizes the complexity of the problem and the exceptions from the rule. After describing some morphologic signs of diminished vitality of cells, he concludes that radiosensibility is due to the physiologic condition, but not to the morphology of the cell. Increased metabolism and reproduction cause increased sensibility. As a rule, one should give the maximal dose possible without injuring the healthy tissue. The extension of the cancer and the skill of the radiologist are two other important factors in prognosis.

High Bacterial Content of Some Tuberculous Suppurations.—Dumont publishes two cases, in which examination of the pus revealed an unusually high number of tubercle bacilli. The pus may resemble macroscopically the common infections, though it contains only tubercle bacilli.

Intraspinal Injections of Diphtheria Antitoxin in Malignant Diphtheria.—Benhamou, Camatte and Flogny report several favorable results from intraspinal injections of 20-40 c.c. of antidiphtheric serum in malignant diphtheria. They were aimed against the intoxication of medullary centers. Intramuscular injections of high doses of serum were used in addition.

Presse Médicale, Paris

31: 573-580 (June 27) 1923

Fracture of Base of First Metacarpal Bone. L. Imbert and Cottalorda.—p. 573.
Hexamethylenamin Not a Diuretic. B. Saad.—p. 577.

31: 581-592 (July 4) 1923

*Depression and Neurasthenia. M. de Fleury.—p. 581.
*Intraspinal Anesthesia. P. Guibal.—p. 583.

Depressive States and Neurasthenia.—De Fleury deplores the confusion prevailing in regard to neurasthenia, and the blunders in treatment which this entails. A minor psychosis with depression usually requires sedatives and other soothing measures. When it is mistaken for neurasthenia, and treated with tonics and the patient is told to "brace up," the condition grows steadily worse. The soil for neurasthenia is sluggish metabolism; the onset is gradual; generally after some disease, physical overexertion or worry, with hypotonia of the muscles and insufficiency of the endocrine system, circulation, digestion, etc., with tendency to ptosis. Recovery may be counted on under purely physical measures, but psychotherapy is useful toward the last. The mind works sluggishly, and there is a tendency to indecision and worry, but the hypochondria does not have deep roots. True neurasthenia is rare, and does not recur after recovery. A tendency to a depressive psychosis calls for sedative treatment; stimulants aggravate the condition.

Intraspinal Anesthesia.—Guibal protests against the intra-arachnoid injection of caffein which some have been advocating to ward off mishaps with intraspinal anesthesia. He used the caffein in fifteen cases recently, and in five there were severe bulbar symptoms, fatal in two, in one after three weeks of paraplegia. Paralysis, anesthesia, eschars and sphincter disturbances followed in a number of cases. These mishaps in twenty-five days with the caffein outnumbered, and were more severe than anything of the kind encountered before in 3,500 applications of intraspinal anesthesia in the last twelve years. The caffein evidently had a destructive action on the spinal cord, and did not ward off bulbar disturbance, as anticipated. He adds that intraspinal anesthesia should be considered only when general anesthesia is contraindicated.

Revue de Chirurgie, Paris

60: 553-632, 1922

*Resection of the Sympathetic. R. Leriche.—p. 553.
*How to Modify Pressure in Cerebrospinal Fluid. P. Wertheimer.—p. 570.
Habitual Dislocation of Patella. E. Chauoin and J. Liautard.—p. 594. Conc'n p. 679.

Sensory Effect of Resection of the Sympathetic.—Leriche asserts that in all his extensive experience with periarterial sympathectomy, he has only once discovered any modification of the sensibility in peripheral regions thereafter. In this one case, however, as vasomotor function improved, the sensibility improved. The brachial nerve had been severed by a bullet and sutured in 1915; the periarterial sympathectomy followed a year later; sensibility returned to all fingers fifteen days later, as the contracture of the fingers gradually subsided. This single case is not conclusive, but it suggests that sympathectomy might possibly prove a useful adjuvant to an operation to reconstruct a severed nerve.

How to Modify the Pressure in the Cerebrospinal Fluid.—Wertheimer reports ten cases which confirm the feasibility of reducing or increasing the intracranial pressure at will. He prefers a 30 per cent. solution of glucose, 20 c.c. given by the vein, repeated twice in six days. Or 40 gm. of glucose in 80 or 100 c.c. water can be taken by the mouth twice in twenty-four hours. This is kept up for six days. To relieve hypotension, distilled water is used for the injection, injecting 20 c.c. at two day intervals three times. Or subcutaneous injection of physiologic salt solution could be used. He comments on the wide field for this indirect means for influencing intracranial venous and cerebrospinal fluid pressure.

60: 633-719, 1922

*Laceration of Bladder with Fracture of Pelvis. G. Miginiac.—p. 633. Cont'd.

Laceration of the Bladder with Fracture of the Pelvis.—Miginiac gives summaries of ninety-two cases of fracture of the pelvis from contusion. The list includes some unpublished cases in his own experience. He expatiates on the advantages of an exploratory laparotomy and cystostomy in all such cases.

Annali d'Igiene, Rome

33: 153-240 (March) 1923

Bactericidal Action of Copper Vessels on Water Kept in Them. I. Sacchetto and M. Savini.—p. 153.
Survival for Ten Years of Typhoid and Colon Bacilli Kept in Blood or Ascitic Fluid. V. Puntoni.—p. 165.
Conservation of Virulent Danysz Mouse Virus for Destruction of Field Mice. A. Alessandrini.—p. 169.
Cultivation of Anaerobic Germs in Presence of Air in Blood and Serum Culture Mediums. M. Carpano.—p. 180.

Archivio Italiano di Chirurgia, Bologna

7: 221-328 (May) 1923

*Diversion of the Urine. F. Putzu.—p. 228.
Primary Osteosarcoma of Adductor Magnus. C. F. Bianchetti.—p. 233.
*Stenosis from Abnormal Position. S. Solieri.—p. 253.
Anomalies of the Dorsalis Pedis Artery. A. Catterina.—p. 269.
*Operations on Dog Vas Deferens. Anglesio and Baroni.—p. 277.
Cystic Kidney in Young Pregnant Woman. A. Angeli.—p. 299.
Reconstruction of Pelvic Diaphragm After Abdominal Hysteropexy. C. Licini.—p. 311.

Diversion of the Urine.—Claim for Italian priority.

Stenosis of Ileum from Abnormal Position.—Retraction of the ileocecо-appendicular fold is an easily corrected cause of partial or complete ileus. Solieri's examination in 1,300 operative cases of appendicitis disclosed that this fold varies in shape and position in different persons, and its causal importance is liable to be overlooked. The ileum is drawn tight against the cecum; there is no sharp kink, but a gentle curve, the concavity above, with more or less axial torsion. The retraction may be congenital or acquired. In appendicitis operations this fold should be severed to prevent cicatricial retraction.

Autoplastic Operations on Vas Deferens.—In seventeen dogs, Anglesio and Baroni implanted a segment of the femoral vein over the stumps of the severed vas. The vein tissue was always absorbed, leaving a stout shell of connective tissue in its place. The continuity of the vas deferens was thus insured, but there was always so much proliferation of the epithelium, in the mucosa of the stumps of the vas, that the lumen was invariably obstructed.

Policlinico, Rome

30: 281-336 (June 15) 1923. Surgical Section

Surgical Treatment of Megacolon. G. Giordano.—p. 281.
Suppurative Arthritis of Pubic Symphysis in Young Parturient. S. Solieri.—p. 298.
*Operative Grafts of Cancer. G. Villata.—p. 306.
*Nitrogen Retention in Kidney Disease. G. Nicolich, Jr.—p. 319.

Operative Grafts of Cancer.—Villata reviews the recorded clinical and experimental experiences in this line, and reports a case in which a large mucous adenocarcinoma of ovarian type had developed in the laparotomy incision, ten months after removal of a papilliferous cystoma in the right ovary. The cystoma had shelled out intact, with no escape of contents; contact with the pedicle must be incriminated for the recurrence.

Disturbances in Elimination of Nitrogen in the Diagnosis and Prognosis of Kidney Disease.—Nicolich summarizes articles on this subject in THE JOURNAL and elsewhere, commenting on the valuable information to be derived from the type and degree of retention of nitrogen.

Riforma Medica, Naples

39: 529-552 (June 4) 1923

*Familial Cirrhosis of the Liver. A. Bolaffi.—p. 529.
*Present Conception of Arthritism. G. Cuneo.—p. 535.
Lymphatic Routes Connecting Intestine and Lung. G. Moseati.—p. 539.
The Mediastinal Syndromes. I. Jacono.—p. 541.

Cirrhosis of Liver in Two Brothers.—The men were 26 and 36, and both developed slowly progressing cirrhosis, with hypertrophy and jaundice, toward the close of their service in the World War. Bolaffi compares these with the few similar familial cases on record.

The Constitutional Predisposition to Joint Disease.—Cuneo's research on sluggish metabolism, the gouty tendency, the arthritic diathesis, or uricacidemia as it is variously called, has demonstrated that the normal balance between the nitrogen and the calories is upset in these conditions. By studying the changes in the metabolism in the light of the law of this balance, we can control the pathologic production of uric acid. Each of the arthritic diseases (gout, heart and valvular disease, and urate deposits in skin, kidneys and joints) has a different origin, and calls for different dietetic management. This, he says, should not be based on isolated tests for urea or uric acid but on the multiple changes revealed by the proportions between the nitrogen and the calories.

Anales de la Facultad de Medicina de Montevideo

8: 291-444 (April) 1923

Cancer in Ampulla of Vater. D. Prat.—p. 291.
Cancer in Hepatic Duct. Id.—p. 294.
*Reduction of Old Dislocation of Shoulder. D. Prat.—p. 301.
*Chagas' Disease in Uruguay. A. Gaminara.—p. 311.
*Influence of Ions on Glycolysis. Varela Fuentes and Rubino.—p. 360.
Dextrocardia with Heterotaxia in Girl. E. Portu Pereyra.—p. 377.
The Lungs After the Throat Has Been Cut. Zamora and J. May.—p. 387.
*Electric Phenomena in Muscles. H. J. Rossello.—p. 396.
Urea in the Blood After Operations. J. C. del Campo.—p. 400.
Present Status of Treatment of Diphtheria. J. Bonaba.—p. 407.

Dislocation of the Shoulder.—Prat comments on the ease with which he corrected the luxation by the Mothe-Kocher technic in the three cases described. The dislocation had occurred from five to six weeks before.

Chagas' Disease in Uruguay.—Gaminara's profusely illustrated article was awarded the faculty Gallinal prize in 1921. The reduvida bugs that transmit the disease have been found extensively in Uruguay, and 25 per cent. were infested with what seemed to be the trypanosome of Chagas' disease, and produced the disease in animals. The trypanosome has not been found in man, but a number of chronic cases of Chagas' disease have been encountered. They represent the pluriglandular, the cardiac or the nervous form as described by Chagas. The acute forms had not been recognized in Urnguay to date of writing. The triatoma bugs can live for two years, and can harbor the flagellates from the larval stage till death.

Research on Glycolysis.—The research was on the influence of hydrogen, calcium and mercury ions on glycolysis in the blood.

Physiology of the Muscles.—Rossello presents evidence to show that every muscle subjected to traction, even without excitation or contraction, generates electric phenomena.

Archivos Latino-Amer. de Pediatría, Buenos Aires

17: 321-400 (May) 1923

*Rectal Cancer in Boy. E. P. Lasnier.—p. 321.
Prophylaxis of Diphtheria. M. Ponce de León.—p. 335.
*Intracranial Hypertension. S. E. Burghi and V. Escardó y Anaya.—p. 346.
*The Nem System. A. Olaran Chans.—p. 359.
*Ascending Myelitis in Acute Poliomyelitis. J. M. Estapé.—p. 384.

Rectal Epithelioma in Boy.—Lasnier reports that the round-cell carcinoma in the boy, aged 13, ran its fatal course in fourteen months. The diagnosis had been obscured by concomitant amebic dysentery. The yearly mortality of cancer in Uruguay averages 1,000, in a total population of 1,500,000.

Sella Turcica Sign of Intracranial Hypertension.—The roentgen outline of the pituitary fossa was characteristically abnormal in the eight cases of intracranial hypertension described. This seems to be a reliable sign of hypertension, of at least three months' duration, in children after closure of the fontanels to the age of 12. The cerebellopontile hydatid cyst in one case had developed without other symptoms than this peculiar shape of the sella turcica. In another case, the normal outline testified against the assumed brain tumor, and the child recovered spontaneously.

The Nem System in Feeding.—Pirquet's system was described in THE JOURNAL, Nov. 12, 1921, p. 1541, and was reviewed editorially recently, Aug. 4, 1923, p. 394.

Ascending Spinal Paralysis in Acute Poliomyelitis.—The diffuse myelitis of the Landry type in the boy, aged 12, developed ten days after the onset of acute poliomyelitis. The disease ran a protracted course, and there was still some right facial paralysis and paresis of the left foot at the end of the fourth month.

Brazil-Medico, Rio de Janeiro

1: 287-296 (May 26) 1923

Leptospira Couvyi N. Sp. Found in Case of Dengue. Gomes de Faria.—p. 287.
Foreign Bodies in Esophagus. D. Sanson.—p. 288.
Paraspecific Potency and the Avidity of Antitoxic Antivenins. R. Kraus.—p. 289.
Need for Welfare Work for Infants. M. Lopes de Castro.—p. 290.

1: 297-312 (June 2) 1923

*Curative Action of Staphylococcus Bacteriophage. Nelson Barbosa.—p. 297.
*The Bacteriophage in Therapeutics. J. da Costa Cruz.—p. 298.
Granuloma in Horses. C. Magarinos Torres, C. da Fonseca and A. E. Arêa Leão.—p. 301.

Curative Action of Staphylococcus Bacteriophage.—Nelson Barbosa used a staphylococcus bacteriophage obtained from Brussels, and states that the lytic action on staphylococci from patients at Rio with furuncles, abscesses, and pyelitis was pronounced. Of the product thus obtained, he injected 0.5 or 1 c.c. subcutaneously in two women with pyelitis and staphylococci in the urine. The disease had resisted other measures for twenty-three and ten days, but the general symptoms subsided completely by the second day and the sixth hour after the injection, and the urine was soon sterile. In a third case, the bacteriophage product was applied locally to a suppurating wound; prompt improvement followed, the pain disappearing after a single application.

The Bacteriophage in Therapeutics.—Da Costa Cruz gave bacteriophage by the mouth in twenty-four cases of bacillary dysentery. Marked benefit followed in every case, in some within four or five hours. Some recovered after one or two doses (2 c.c.); in two others, the symptoms returned on suspension of treatment, but disappeared permanently on resumption. The work issues from the Instituto Cruz.

Repertorio de Medicina y Cirugía, Bogotá

14: 247-294 (April) 1923

The Mysterious Fever at Bucaramanga. J. M. Montoya and J. Manrique.—p. 247.
Electrocoagulation in Treatment of Tumors and Skin Disease. J. Rico.—p. 250.

Revista Médica del Uruguay, Montevideo

26: 125-188 (April) 1923

*Thrombophlebitis from Otitis. M. Armand Ugón.—p. 125.
Classification of Gastro-Intestinal Disturbances in Infants. J. A. Bauzá.—p. 129.
Invagination in Acute Enterocolitis. N. Leone Bloise.—p. 137.
Pityriasis Simulating Pigmented Syphilids. J. May.—p. 141.

Thrombophlebitis from Mild Otitis Media.—The infant, aged 11 weeks, developed mild rhinopharyngitis, followed by convulsions and thrombophlebitis of the sinuses, fatal in ten days. Necropsy revealed pus in the antrum on both sides, with pneumococci, although there had been no symptoms suggesting mastoiditis. On account of the convulsions, paracentesis had been done early in both ears, and repeated, although nothing but a redness of the membrane in one ear suggested possible otitis media. The terminal phase was a pneumococcus septicemia with profuse intestinal hemorrhages.

Revista Mexicana de Biología, Mexico, D. F.

3: 135-178 (April) 1923

*Hematology in Mexican Table Land. F. Ocaranza.—p. 136.
*Venom Apparatus of Snakes. I. Ochoterena.—p. 148.
Research on Sterility. F. Castillo Nájera.—p. 159.
Neo-Arsphenamin in Amebic Dysentery Refractory to Emetin. E. Pous Châzaro.—p. 168.
Common Forms of Malaria in Torrid Zone of Mexico. Id.—p. 171.

Hematology of the Indigenous Races of Mexico.—The Indians of the central table land of Mexico have lived for uncounted generations at this high altitude. Ocaranza cites their polycythemia as confirmation of his theory that an abnormal number of erythrocytes is a manifestation of adaptation to altitudes. The slight shifting of the Arneth groups was to the right.

Histology of Poison Glands of Vipers.—Ochoterena's photomicrograms are of *Crotalus scutulatus,* and of the venom tooth of vipers. They illustrate the dictum, "Ontogenesis recapitulates phylogenesis."

Archiv für Gynäkologie, Berlin

119: 1-162 (June 21) 1923

Color of the Corpus Luteum. H. H. Escher.—p. 1.
Hemorrhage from Rupture of Corpus Luteum. H. Zacherl.—p. 18.
*Annulling Action of Human Serum on Placenta Toxin. T. Hayashi.—p. 29.
Cholesterol Metabolism in Pregnancy and Childbirth. E. E. Pribram.—p. 57.
*Nature of Eclampsia. I. Obata.—p. 69.
Blood Sugar in Eclampsia. I. Obata and T. Hayashi.—p. 80.
Tuberous Endometritis of the Decidua. E. Kehrer.—p. 97.
*Tearing Loose of Tissues Around External Os Uteri. H. Füth.—p. 102.
Blood Platelet Count in Women. N. C. Louros.—p. 110.
*Vaginal Flora as Term Approaches. R. Apel.—p. 115.
*Sedimentation Speed in Diagnosis. P. Schumacher and W. Vogel.—p. 127.
Ecchymosis in Skin in Congenital Syphilis. O. Neumann.—p. 136.
*Congenital Hydrops. H. Reinhard Eichelbaum.—p. 149.

Antitoxic Action of Serum on Placenta Toxin.—Hayashi found that the substance in human serum which neutralizes placenta toxin is contained in the fluid of the dialyzed serum and not in the sediment. It is not identical with the hemolytic complement, and it loses its potency when heated to 60 C.

Nature of Eclampsia.—Obata presents evidence to the effect that insufficiency of the liver is the cause of loss of the power of the serum to neutralize placenta toxin. The loss of this power seems to be the causal factor in eclampsia. He always found this toxin-annulling action of the serum materially reduced in eclampsia, but it gradually returns in from three to five days after the last convulsion. Experiments on animals showed that only the liver seemed to have an influence on this toxin-annulling power.

Spontaneous Expulsion of Vaginal Portion of Uterus.—The large flap torn loose at delivery measured 9.5 by 12 cm. and was 1 or 2 cm. deep. The head had become impacted and prevented the dilation of the os.

The Vaginal Flora at Term.—Apel's research has demonstrated that only 50 per cent. of the women have a normal vaginal secretion during the last few weeks of pregnancy.

Sedimentation Curve of Erythrocytes in Diagnosis of Gynecologic Disease.—Schumacher and Vogel state that with normal temperature and leukocyte count any considerable change in the speed of sedimentation, in cases of ovarian tumors, is a sign of inflammatory changes or of softening and resorption of tumor tissue. They recommend the test as a more reliable index of inflammation than the leukocyte count. Negative findings are particularly instructive as they testify that there is no appreciable inflammatory process in the body at the moment. German exchanges refer to this test as the B. K. S. (blutkörperchensenkungsgeschwindigkeit).

Congenital Hydrops.—Eichelbaum discusses the connection between this erythroblastosis in the new-born and icterus neonatorum.

Archiv für klinische Chirurgie, Berlin

124: 565-746 (June 23) 1923

*The Stomach Channel. K. H. Bauer.—p. 565.
Fifty-Three Perforated Gastric and Duodenal Ulcers. H. Steichele.—p. 630.
Carcinoid of Small Intestine with Metastasis. Schnebel.—p. 652.
*Rare Complications of Perforating Gastric Ulcers. A. Lehrnbecher.—p. 661.
Case of Adamantinoma. A. Schlosser.—p. 679.
*Structure and Pathology of Goiter. A. Troell.—p. 700.
Hockey Accidents. E. Glass.—p. 742.

What Is the Stomach Channel?—The term *magenstrasse* is applied to a roadbed along the lesser curvature which is formed by a special lengthwise arrangement of the larger folds in the mucosa. The tendency of ulcers to locate in the course of this channel gives it special importance, and Bauer now announces that in structure, function and pathology it is the survival in man of the gullet (*schlundrinne*) in the lower animals. Like all such rudimentary survivals, the tissues are not so resistant as organs of older phylogenetic development. This conception suggests the advisability of resecting the whole of this channel in operating for ulcer.

Complications of Gastric and Duodenal Ulcer.—In Lehrnbechers' first case, the hard gastric ulcer had entailed thrombophlebitis of the portal vein, suppuration in the liver, and embolism in the brain of the man, aged 47. In another man a duodenal ulcer had led to a subphrenic gas abscess.

In a third case an ulcer on the posterior wall of the stomach perforated into the pancreas, with suppuration extending to involve the thoracic duct. He cites numerous recorded cases of other unusual and fatal complications of these ulcers.

Structure of Goiter, Especially the Exophthalmic Type.—Troell's monograph is accompanied by sixty-eight photomicrograms in eight large folding plates, some colored. His sixty-two case reports were published in the *Svenska Läkaresällskapets Handlingar*, and were mentioned in these columns, May 27, 1922, p. 1674. The anatomopathologic findings are so characteristic that from them alone we can distinguish the thyrotoxic cases.

Deutsche medizinische Wochenschrift, Berlin

49: 569-600 (May 4) 1923

Wandering of Epidemics. K. Kisskalt.—p. 569.
Theory or Experiment on Models for Explanation of Electrobiologic Currents? R. Beutner.—p. 571.
Cesarean Section in Modern Obstetrics. W. Benthin.—p. 572.
*Early Diagnosis of Tuberculosis of Kidneys. A. Hübner.—p. 574.
Quinidin in Auricular Fibrillation. Arjeff.—p. 576.
Chemotherapy of Malignant Tumors. R. Roosen.—p. 577. Conc'n.
Sedimentation of Erythrocytes in Tuberculous Children. Dehoff.—p. 578.
Diabetes Insipidus in Acromegalia. R. F. Weiss.—p. 580.
Case of Malignant Edema After Therapeutic Injection. Kemkes.—p. 581.
Method of Determination of Sedimentation Speed. G. Katz.—p. 585.
Lecithin in Relation to General Anesthesia. K. Tittel.—p. 585.
Treatment of Enuresis with Thermopenetration. I. v. Büben.—p. 586.
Clearing House System for Practitioners' Accounts. Graf.—p. 587.

Early Diagnosis of Tuberculosis of Kidneys.—Hübner finds that the value of demonstrating bacilli in the urine is overestimated. Inflamed kidneys are permeable to tubercle bacilli without being infected. The progressive tendency of the process is an important sign. The bladder is early affected. Cystoscopy is therefore very important. He finds that the points of predilection in early cases are in the ostium, vertex and in the mobile parts of the bladder, but not in the trigone, as in advanced cases.

Deutsche Zeitschrift für Chirurgie, Leipzig

179: 1-144 (April) 1923

*The Prognosis Before Prostatectomy. Grauhan.—p. 1.
*Immune Biology of Surgical Tuberculosis. W. Drügg—p. 65.
Embryonal Mixed Tumor of Kidney in Man of 59. W. Baumann.—p. 102.
*Healing of Wounds in Diaphragm. T. Naegeli.—p. 109.
*Tardy Roentgen Ulcers. K. Grasmann.—p. 115.
Hydronephrosis of Nonmechanical Origin. H. Boeminghaus.—p. 129.

The Prognosis Before Prostatectomy.—Grauhan has analyzed the causes of death in cases of hypertrophy of the prostate, comparing the outcome with the clinical findings before and during treatment. The kidneys determine the prognosis, and this we are able to estimate before intervention, as the obstruction to the flow of urine almost invariably early modifies the production of urine. Among 506 patients with hypertrophied prostate the majority who have died, with or without operative treatment, voided less than 1 liter of urine within four hours of the Volhard water test (ingestion of 1.5 liters of water). The largest half hour portion was far below the normal 500 c.c. The concentration of the urine in the following twelve hours reached only 1.010 or 1.014 or less in 6 of the 7 fatal cases among 60 tested. Complete loss of the power of adaptation to large or small intake of fluids indicates danger, but improvement may follow. The nonprotein nitrogen in the blood was above normal but moderate; in the fatal cases the range was from 40 to over 80 mg. In the fatal cases the freezing point for the blood was —0.65; —0.61 definitely forbids prostatectomy. Of the 25 with a pressure of 150 mm. to 200 mm., 7 died after a palliative operation and 2 after prostatectomy. The high blood pressure increases the danger not only of hemorrhage but also of the shocklike sudden drops in pressure which are liable to damage the kidneys severely. Recent reexamination of 22 patients of the two-stage group failed to reveal any contraction of the bladder from pericystitic processes. Four patients cystostomized within three years are content and refuse further intervention.

Immune Biology in Surgical Tuberculosis.—Testing patients with the separate elements of the tubercle bacillus, separates them into groups according as they react to these separate elements. Drügg tests each patient with four concentrations of the four elements. The test is repeated from four to six weeks later as a guide to further treatment, combining medical and surgical measures according to the responses.

Wounds of the Diaphragm.—Naegeli's experiments on dogs confirmed the smooth healing after suture of a transverse slit in the diaphragm. The constant peril of hernia after a wound of the diaphragm should compel suture of the slit, access being secured either from above or below.

Tardy Roentgen Burn.—The exposures of the ovaries were made in 1916 in treatment of bleeding uterine myomas. Four years later a typical roentgen ulcer developed in the field of exposure in the right buttock. There have been no further disturbances since this field was resected. In a second case, the tardy roentgen ulcer healed in two months under an airtight rubber dressing. Resection had been contraindicated in this case by extensive hard infiltration around the ulcer.

Klinische Wochenschrift, Berlin

2: 957-1004 (May 21) 1923

*Extrahepatic Bile Ducts in Cholelithiasis. L. Aschoff.—p. 957.
Problem of General Paresis and Tabes. Raecke.—p. 958.
*Physiology of Palpation. Goldscheider.—p. 961.
Schizophrenia as Systemic Psychic Affection. Kleist.—p. 962.
Sclerema of Adults After Influenza, with Changes in Cutaneous Nerves. E. Hoffmann.—p. 963.
*Action of Roentgen Rays on Catalyzers. Ellinger and Landsberger.—p. 966.
*Response of Growths to Roentgen Rays. G. Schwarz.—p. 969.
Immediate Reaction with Intracutaneous Serum Injections. Biberstein and Jadassohn.—p. 970.
Neurogenous Heterochromia of Iris. F. Kauffmann.—p. 971.
*Lowering of Blood Pressure Under Electric Treatment. Peemöller.—p. 973.
Charcot-Leyden Crystals in Pleuritic Exudate. A. Arnstein.—p. 976.
Determination of Bilirubin in Urine. B. Zins.—p. 978.
"Superinfection in Experimental Syphilis." Buschke and Kroó. p. 978.
*Metabolism in Muscles and Heat Regulation. Freund and Janssen.—p. 979.
Pleural Pressure. F. Rohrer and K. Wirz.—p. 979.
Severe Case of Ascariasis. H. K. van Winterfeld.—p. 980.
Arteriosclerotic Kidney Disease, and Treatment. Guggenheimer.—p. 981.
Income and Cost of Living in Kiel 1914-1922. Schütz.—p. 985.

Orthology and Pathology of Extrahepatic Bile Ducts in Their Relation to Cholelithiasis.—Aschoff gives an outline of the conditions which may cause formation of stones in gallbladder and ducts.

Physiology of Palpation.—Goldscheider reports some experiments which he made together with P. Höfer. They found that superficial sensibility is very important for the deep sensations of pressure. They also experimented to explain the phenomenon discovered by Hausman, that we cannot feel the pulse with the tongue.

Mechanism of Catalytic Component of Cell Breathing and the Action of Roentgen Rays on It.—Ellinger and Landsberger found that roentgen irradiation of different substances may increase or inhibit their catalytic action. The change lasts longer than the action of the roentgen rays. This was especially distinct in ferric chlorid, and is due to its induced phosphorescence. Late effects of roentgen rays in the organism may be due to a similar process.

An Apparently Constant Difference of the Behavior of Benign and Malignant Growths Toward Roentgen Rays.—Schwarz finds that normal tissues have an equal or increasing sensitiveness toward repeated roentgen irradiations. The sensitiveness of malignant tumors decreases under similar conditions. This is true especially of the recurrences after irradiation. The increased malignancy of these tumors may be due also to a certain selective action of the former irradiations.

Lowering of Blood Pressure by Artificial Light and Apparatus of High Potential and Frequency.—Peemöller reviews the new literature, which shows that the real cause of lowering of the blood pressure after use of d'Arsonval's apparatus and similar electric devices, is the formation and inhalation of gas generated by the apparatus (nitrous oxid).

Metabolism in Muscles and Heat Regulation.—Freund and Janssen found that muscle metabolism is regulated from the thermic center through the periarterial nervous plexus. Contractions, tonus or hormones are not essential for chemical thermoregulation.

Medizinische Klinik, Berlin

19: 635-670 (May 13) 1923

Paranephritic Abscess. R. Dittrich.—p. 635.
*Deaths After Insufflation of Gas. A. Bingel.—p. 637.
*Increase of Secret Prostitution. M. Gumpert.—p. 640.
*Mediastinal Syndrome with Gastric Ulcers. Marcovich.—p. 642.
*Relation of "Roentgen Jag" to Irradiation of Liver. J. Borak and A. Kriser.—p. 644.
Treatment of Obesity with Sodium Sulphate Waters. E. Pflanz.—p. 645.
Fever in Ulcers of Stomach. E. Jacobs.—p. 647. Conc'n.
Gradually Getting Patients on Their Feet. Schmidt and Weisz.—p. 649.
A Rare Arsphenamin Injury. H. Sieben.—p. 650.
A New Rational Gastroscope. W. Sternberg.—p. 653.
*Action of Hexamethylenamin and Determination of Formaldehyd in Body Fluids. W. H. Crohn.—p. 654.
Rectovaginal Fistula. E. Runge.—p. 658.
Survey on Diseases of Heart and Blood Vessels. E. Edens.—p. 659.

Deaths After Insufflation of Gas Into the Spinal Canal and Ventricles of Brain.—Bingel surveys the fatal results of insufflation of gas into the lumbar region of the spinal canal or the ventricles of the brain. Most of these patients suffered from tumors. He asks more publications of untoward results.

Increase of Secret Prostitution.—Gumpert finds a parallel between increase in uncontrolled prostitution and cost of living.

Syndrome in Mediastinum Accompanying Gastric Ulcer.—Marcovich confirms Kraemer's, Holler's and Veczler's findings in gastric ulcers. The clinical signs in the mediastinum of gastric ulcers are: interscapular dulness, and pain, spinalgia, a hyperalgetic zone and d'Espine's phenomenon.

Relation of Acute Roentgen Poisoning to Irradiation of Liver.—Borak and Kriser found that disturbances of the liver cannot be the cause of the "roentgen jag," since irradiation of the liver did not cause subjective or objective changes.

Action of Hexamethylenamin and Determination of Formaldehyd in Body Fluids.—Crohn examined sixty-three samples of urine, blood and cerebrospinal fluid after intake of hexamethylenamin. He found formaldehyd only exceptionally.

Monatsschrift für Kinderheilkunde, Leipzig

26: 1-96 (April) 1923

Asthenic Children. Schiff.—p. 1.
*Serum Treatment of Epidemic Meningitis. K. Lewkowicz.—p. 17.
Neuralgia in Children. A. Reiche.—p. 34.
Late Meningeal Bleeding from Birth Injury. A. Schele.—p. 43.
*Cerebrospinal Fluid in Hereditary Syphilis. O. Tezner.—p. 49.
*Constitutional Eczema of Infants. E. Gartje.—p. 57.
Action of Juice from Vegetables on Calcium Metabolism in Rachitis. D. H. Kozitschek.—p. 65.
*Diabetes Mellitus and Jaundice. A. Koleczek.—p. 68.
Lethal Bleeding from Arrosion of Vessel by Thrush. O. Riemschneider.—p. 71.

Technic for Antiserum Treatment of Epidemic Meningitis in Narrowing of Ventricles of Brain.—Lewkowicz found by means of the precipitation reaction that the antiserum injected into the ventricles of the brain disappears sometimes in twelve or even eight hours, if the ventricles are narrow. He believes that several intraventricular injections during the day are necessary to get therapeutic results in severe cases.

Examination of Cerebrospinal Fluid in Hereditary Syphilis.—Tezner reports on his findings in the cerebrospinal fluid of 25 syphilitic infants. This makes, together with his previously published material, 83 children with positive findings in 43.3 per cent. Among his patients 41 were infants (56.1 per cent. positive).. Wassermann reaction was positive in these cases 11 times (6 times as the only pathological change present).

Hypersusceptibility of the Skin in Certain Cases of Constitutional Eczema of Infants.—Gartje injected milk fat and other substances intracutaneously in children suffering from eczema. He found that children who are not stout and who present a dry eczema are oversensitive to milk fat. The affection is influenced favorably by a fat-free diet. Cod liver oil has an unfavorable influence, like any other fat.

Diabetes Mellitus and Jaundice.—Koleczek reports the history of a boy, aged 6, who developed symptoms of severe diabetes with acidosis immediately after recovery from a catarrhal icterus and an excess in sweet food. The condition of the patient became gradually better, until he was able to consume 147 gm. of carbohydrates without glycosuria.

Münchener medizinische Wochenschrift, Munich

70: 553-586 (May 4) 1923

Puncture of Sinus and Injections of Arsphenamin in Syphilitic Infants. W. Schönfeld.—p. 553.
Puncture of Sagittal Sinus in Infants. A. Salomon.—p. 554.
*Treatment of Typhoid Bacilli in Carriers. G. Wagner.—p. 555.
*Roentgen Injury After Irradiation of Neck. E. König.—p. 558.
*Roentgenologically Visible Ulcer of Stomach. J. Büscher.—p. 559.
*Cantharidin Blister Test. E. Thomas and W. Arnold.—p. 561.
Skin Temperature Over Tuberculous Joints. C. Mau.—p. 562.
*Tortuous Course of Arteries. R. Geigel.—p. 564.
Tuberculin Reactions in Diagnosis and Prognosis. C. Moewes.—p. 564.
*Poisoning by Sodium Chlorid. Heinz and Haas.—p. 565.
Prophylactic Treatment with Arsphenamin. Görl and Voigt.—p. 567.
Simple Artificial Foot Adjustable at Three Points. Baeyer.—p. 567.
Self-Holding Clamp for Compression of Aorta. H. Becker.—p. 567.
Mercuric Chlorid Poisoning from the Vagina. Thoret.—p. 569.
Suprasternal Dislocation of Clavicle. H. Berger.—p. 569.
Post Partum Hemorrhages. Opitz.—p. 570.
Medical and Statistical Data from Russia. Weissenberg.—p. 572.

Lowering of Virulence of Typhoid Bacilli in Carriers.—Wagner found that the virulence of typhoid bacilli cultivated from carriers may decrease to one-fourth, if the carrier is treated with a vaccine. After some time (six months) the virulence increased again.

Roentgen Injury After Irradiation of Neck.—König reports a case of severe injury of the larynx due to irradiation of a patient with actinomycosis. He emphasizes the necessity of publishing unfavorable results, and finds that the radiosensitivity of cartilage is underestimated.

Roentgenologically Visible Ulcer of Stomach and Its Treatment.—Büscher recommends internal treatment in smaller visible ulcers of the lesser curvature. Ulcers which are larger than a hazelnut, those which are causing a marked hour-glass contracture, and pyloric ulcers with impairment of evacuation should be operated on.

Foreign Substances in the Cantharidin Blister as Index of Permeability and of Dermotropism.—Thomas and Arnold produced blisters on the inner side of nondepilated rabbits' ears with a few drops of a 0.4 per cent. solution of cantharidin in equal parts of collodium and ether. They report their results after injection and ingestion of fluorescein, sodium salicylate, acid phosphates, and potassium ferrocyanid.

Cause of Tortuous Arteries.—Geigel finds that the elongation of arteries which causes the well known tortuous outline in arteriosclerosis is not due to blood pressure. It is caused by the blood stream; the flowing blood pushes the artery along with it as the walls become less elastic.

Poisoning by Sodium Chlorid.—Heinz and Haas report on the poisoning of poultry by table salt mixed with the food. Lethal poisoning has been observed also in man. One hysterical woman died after taking 250 gm. of salt in one dose.

70: 587-618 (May 11) 1923

Malaria and Its Abortive Treatment. G. Baermann.—p. 587. Cont'd.
*Action of Hormones on Capillaries in Man. W. Redisch.—p. 589.
Ovary as Source of Intraperitoneal Bleeding. R. Hornung.—p. 592.
*Boyksen's Diagnostic Reaction for Carcinoma. H. Eggers.—p. 594.
Abderhalden's Reaction. A. Gersbach.—p. 596.
Diphtheria of Nose in Infants. P. Schugt.—p. 598.
Scoliosis from Muscular Traction After Empyemas. A. Müller.—p. 601.
Triatoma Flavida in Cuba. W. H. Hoffmann.—p. 603.
A Substitute for Dextrose in Culture Mediums. P. Keim.—p. 603.
*Diagnosis of Anaphylactic Diseases. W. S. van Leeuwen et al.—p. 604.
Milk Pump. P. Kuliga.—p. 604.
Venereal Diseases in the Occupied Rhine Provinces. L. v. Zumbusch.—p. 605.

Action of Hormones on Capillaries in Man.—Redisch found in two cases of diabetes a more intensive contraction of capillaries after injection of epinephrin, than in healthy persons. The contraction lasted twice as long as usual. Injection of ovarian extract caused in these cases a broadening of the capillaries and lowering of blood pressure. The two hormones showed a certain antagonistic action.

Boyksen's Diagnostic Reaction for Carcinoma.—Eggers finds that Boyksen's reaction in carcinomas is uncertain.

Diagnosis of Anaphylactic Nature of Diseases.—THE JOURNAL summarized Feb. 10, 1923, p. 443, the diagnostic test described by Storm van Leeuwen, Bien and Varekamp. They have since found that danger from using dandruff from the hairdressers to make the extracts can be averted by dialyzing the extracts. Dialysis usually renders the toxic extracts from dandruff suitable for the intracutaneous test reaction.

Zeitschrift für Kinderheilkunde, Berlin

35: 207-329 (June 7) 1923

*"Initial Diarrhea." H. Davidsohn and S. Rosenstein.—p. 207.
Blood Coagulation Time in Jaundice of the New-Born. W. Greuter.—p. 210.
*Scarlet Fever in Infants and Young Children. W. Scheffer.—p. 227.
The "Extinction Phenomenon" in Rubeola. W. Scheffer.—p. 239.
*Scurvy in the Breast Fed. H. Pogorschelsky.—p. 244.
*Pluriglandular Atrophy from Deficiency Diet. B. Schick and R. Wagner.—p. 263.
Erythroderma Desquamativa (Leiner). J. Wittmann.—p. 275.
The Puffer Potency of Cow's Milk. F. Müller.—p. 285.
*Protecting Action of Cholesterol. H. Beumer.—p. 298.
*Epinephrin Diabetes. H. Beumer.—p. 305.
Etiology of Still's Disease. G. Iseke.—p. 315.
Opisthotonus with Pylorospasm. H. Putzig.—p. 322.
*Congenital Stridor. Id.—p. 322.
Change in Sensibility of Skin After Vaccination. Id.—p. 323.
*Ether in Treatment of Whooping Cough. J. Bedö.—p. 325.

"Initial Diarrhea."—Davidsohn and Rosenstein present evidence to confirm the direct connection between pathologic fermentation in the large intestine and the clinical picture in "initial diarrhea." In tests of 237 specimens of stools from fifteen infants, the stools usually showed abnormally high acidity. In 33 per cent. this was the first sign of the morbid condition. Change to food that tends to check fermentation and promote constipation is the most effective means for arresting the disturbances in their incipiency. A chart is given recording the initial diarrhea on two-thirds milk, and the prompt return to normal conditions when small amounts of concentrated albumin milk with 20 per cent. sugar were added. The first sign of recovery in 33 per cent. of the cases was the increase in weight.

Scarlet Fever.—Scheffer relates that of fifteen infants with varicella in one ward, eight developed scarlet fever within two weeks. It was complicated in six cases with suppurative otitis media and in four with swollen glands, but there were no symptoms from the kidneys. The facts observed in these cases suggest that the varicella rash needs further study, as also the application of the Schultz-Charlton extinction (*auslösch*) phenomenon in the diagnosis of varicella.

Scurvy in Breast-Fed Infants.—Pogorschelsky concluded from serial roentgen-ray findings that the multiple small abscesses in the bones of a young breast-fed infant were manifestations of severe scurvy. The poverty of the family had excluded butter fat and milk from the table, but there was abundance of vegetables. The child had thrived till the age of 10 weeks. It improved with addition of lemon juice and tomato juice, and improved still more rapidly when the mother was given butter and fat. The child died suddenly in its fifth month. The clinical picture was not that of classic scurvy, but the resemblance to this was greater than to any other known affection. He has compiled twenty-four recorded cases of scurvy in the breast-fed. The circumstances demonstrate, he says, that the causal trouble is a lack of fat soluble vitamin as well as of the antiscurvy vitamin C.

Pluriglandular Atrophy in Young Children.—In this second communication on this subject, Schick and Wagner describe the outcome in their two previously published cases, and report three new instances. Necropsy in two cases confirmed the extreme atrophy of the thymus and thyroid, suprarenals and pancreas, of the tongue, and of the mucosa of the entire intestine. The ductless glands atrophy more and more. Treatment should aim to stimulate and exercise these glands rather than to spare them. One child, aged 9, had been repeatedly underfed in treatment of digestive disturbances, and had been brought to the clinic as a hopeless case of ulcerative enteritis and peritonitis, although tuberculin tests were negative; the stools were of the diarrheic fat and fermentation type. Under mixed feeding with suitable calory and vitamin content, the child began to thrive at once. In the two fatal cases in infants, there was pronounced xerophthalmia, edema and a hemorrhagic tendency. Probably many cases of cachexia and hemorrhages in the past, ascribed to other causes, were in fact deficiency disturbances from lack of vitamins. The tongue was atrophic, smooth and red in their five cases. The condition has been described as "celiac disease," and "digestive disturbances beyond infancy," but the avitaminosis sets up a vicious circle which results in actual starvation.

Protective Action of Cholesterol.—Beumer has demonstrated that guinea-pigs fed with egg lipoids become exceptionally resistant to chloroform and diphtheria toxin.

Epinephrin Diabetes.—Beumer injected 0.5 c.c. of epinephrin solution in fasting infants with and without preceding injections of salts, and recorded the fluctuations in the sugar content of blood and urine thereafter. The epinephrin induced a transient diabetic acidosis, with hyperglycemia, glycosuria and ketonuria. Sodium bicarbonate did not ward it off, even when given in amounts large enough to make the urine alkaline, but ammonium chlorid checked the action of the epinephrin, reducing the resulting glycemia, glycosuria and acetonuria.

Congenital Stridor.—At necropsy of a young infant, the supposed "thymus death" was explained by a malformation of the trachea with stenosis. The thymus was apparently normal.

Ether in Treatment of Whooping Cough.—Before any publications on ether in treatment of whooping cough had been published, Bedö had been impressed by the coincidence that pertussis had been apparently entirely cured in two children given a general anesthetic for an operation. He has been treating whooping cough systematically with intramuscular injections of ether to a total of 5 c.c. It is painful, but the symptoms of the pertussis rapidly subside. In future he would restrict the treatment to severe cases and to infants.

Zeitschrift für Krebsforschung, Berlin

20: 125-210 (June 15) 1923

*Cancer in the Young. M. Roth.—p. 125.
*Cancer in Fish. N. Anitschkow and E. N. Pawlowsky.—p. 128.
*Cancer in Greenland. J. Fibiger.—p. 148.
Histogenesis of Ovarian Tumors in Fowls. O. Seifried.—p. 188.
*Free Microscopic Service. J. Fibiger.—p. 200.
*Pulmonary Cancer in Miners. Committee Report.—p. 209.
*Cancer in Cadavers at Dresden. Committee Report.—p. 209.

Carcinoma in the Young.—Roth reports three cases. The patients were aged 11, 18 and 21; the oldest and youngest were girls. He suggests that possibly they belong to one of the so-called cancer families in which the cancers appear at an earlier age and in a more virulent form in succeeding generations. The growth was on the buttocks, lower lip and tongue in his cases, and nothing was known of the progenitors.

Growths on the Skin of Fishes.—Anitschkow and Pawlowsky found tumors of different types on three fish of the Gobius family.

Cancer in Eskimos.—The cancer commission of the Danish Medical Association gives the results of ten years of collective inquiry as to cancer in Greenland. All physicians of the country cooperated, and also the American physicians with exploring parties. Fourteen cases were reported, and specimens were sent to the committee from some of the cases. They show that the nature, course and prevalence of malignant disease are approximately alike in all lands. One of the three cases of uterine cancer was at Cape York, the nearest to the pole of any inhabited point. The parotid gland, the neck and the humerus were the sites in the four men; the parotid, the breast, uterus or skin in the ten women. Fibiger suggests that the absence of visceral cancer in such people is due to the low life expectancy; they seldom live to reach the digestive-tract cancer age. The difficulty of diagnosing internal cancer also aids in its escaping detection. Even in Berlin, in 22 per cent. of 711 cases, the cancer had escaped detection; at Copenhagen in 7.6 per cent. of 196 cases, and in Sweden only the necropsy cleared up the dignosis in 122 of 749 cases. The survey in Denmark in 1908 disclosed 0.43 cancers per thousand inhabitants, and this survey in Greenland, with a population of 12,510, shows that cancer is as prevalent there as in any other country. Fibiger discusses further the 127 nonmalignant tumor cases reported, of twenty-four different types.

The Free Microscopic Service of the Danish Cancer Committee.—Fibiger relates that between 1909 and 1921, 6,800 specimens were received from 340 physicians and sixty-one hospitals. Only 2,300 specimens revealed malignant disease.

The Schneeberg Lung Cancers.—This is the report of a special committee that has been investigating lung cancer in coal miners in Saxony, and the unusual prevalence of cancer of the lungs at Dresden. The Schneeberg cancers seem to develop from an occupational predisposition, but there is no uniformity in the structure.

Zeitschrift für Tuberkulose, Leipzig

38: 1-80 (April) 1923

*Toxic Tuberculoid Structures. Guillery.—p. 1.
*Relation Between Side Affected and Prognosis. Aoyama.—p. 22.
Should Every Tuberculous Person be Treated? C. Kraemer.—p. 28.
Comment on "Analysis of Pulmonary Tuberculosis." Maendl.—p. 33.

Toxic Tuberculoid Structures.—Guillery introduced little sacs containing tubercle bacilli intraperitoneally in rabbits. He found marked changes in the omentum and liver remote from the sac, tuberculoid structures at a distance, from toxic action alone.

Relation Between the Side Affected and the Prognosis in Pulmonary Tuberculosis.—Aoyama found in 141 cases that death from tuberculosis occurred earlier in patients with tuberculosis of the left lung. He discusses the possible causes.

Zentralblatt für Chirurgie, Leipzig

50: 793-824 (May 19) 1923

Abdominosacral Operation in Vaginal Cancer. J. Philipowicz.—p. 793.
Treatment of Traumatic Pneumothorax. Feller.—p. 795.
Spontaneous Evacuation of Clamp in Abdomen. Cohn.—p. 798.
*Use of Anesthetics. E. Baumann.—p. 800.
Nephro-Ureterectomy: Complete Petrification. Philipowicz.—p. 803.
Technic of Perineal Amputation of Rectum. K. Nather.—p. 804.
Modification of Measuring Compass. K. v. Dittrich.—p. 807.
*Removal of Stomach Contents in Gastric Operations. C. Neck.—p. 808.

Use of Anesthetics.—Baumann emphasizes the need of chemical tests of anesthetics before using them, and asserts that a large percentage of the fatal accidents arising in connection with the use of anesthetics is due to the spoiled condition of the drugs. Anesthetics must always be used fresh from the original bottle, and remnants must not be poured together, or saved for use the following day in bottles the seal of which has been broken. Secondary decomposition is more marked in ether than in other narcotics. It is not quite so marked in ether-chloroform mixtures and is still less noted in chloroform and ethyl chlorid. Baumann gives the technic for several simple tests, and refers to his larger work for further details.

Removal of Stomach Contents in Gastric Operations.—Neck states that, after lavage of the stomach, he brings the patient into a steep Trendelenburg position and then slowly withdraws the stomach tube. Thus, in all suitable cases, he is able to evacuate completely the stomach contents before the stomach is opened.

Zentralblatt für Gynäkologie, Leipzig

47: 705-736 (May 5) 1923

Serodiagnosis of Syphilis in the New-Born. Esch.—p. 709.
*Incipient Incarceration of Gravid Uterus. Unterberger.—p. 714.
*Interrelationships Between Genital Organs and Mammary Function. B. Schweitzer.—p. 717.
*Cutaneous Striae During Pregnancy. P. Sfameni.—p. 720.
*Albuminuria and Infarct Formation. H. v. Ravenstein.—p. 727.
*Freund-Wertheim Radical Operation. F. Süssmann.—p. 729.

Treatment of Incipient Incarceration of the Retroflexed, Gravid Uterus.—Unterberger describes an extremely simple procedure that he has employed in recent years in three cases of retroflexion of the gravid uterus with beginning incarceration. After establishing the diagnosis "total retroflexion of the gravid uterus" (end of the fourth month), the bladder was evacuated in all three cases with a male catheter. The patient then, having laid aside her heavier outer clothing, was placed on the operating table, strapped on tight, and raised into a very steep Trendelenburg position, in which she was allowed to remain for from ten to fifteen minutes. The position was not found to be uncomfortable as is often the genupectoral position, sometimes employed under like circumstances. A successful result was usually secured by one treatment, but frequently several repetitions of the treatment are required to confirm the result. In each case a normal position of the uterus was secured, and pregnancy was preserved, whereas by other methods abortion is often induced. However, one must be sure of his diagnosis and not mistake a retro-uterine hematocele for retroflexion of a gravid uterus.

Interrelationships Between the Genital Organs and the Mammary Function.—Schweitzer recalls that swelling of the mammary glands is frequently associated with the menses; even a slight secretion of the mammary gland is occasionally present during the menstrual period, but an actual flow of a milklike secretion at the time of the menses, such as occurred in his patient, a girl aged 21, he thinks must be extremely rare. It may have some significance that menstruation set in at the age of 11. It had been regular, but lasted from six to eight days, and had been attended by rather marked loss of blood and severe abdominal pains. Three or four days before the onset of the menses there was a swelling of the breasts together with a painful feeling of tension. For the last six months, however, a whitish fluid had automatically flowed from the breasts during the whole course of the menstrual period. Schweitzer examined the secretion microscopically and found it contained chiefly milk globules, with only a few colostrum bodies. He diagnosed the abnormal condition as a disturbance of internal secretion; hence prescribed tablets of ovarian substance three times a day during the next interval between the menstrual periods. As a result, the next expected menses did not occur; nor was there any trace of secretion from the breast glands. The patient felt no bad effects. The ovarian preparation was omitted and in three months the menses returned, at first with no milk secretion, but soon the old condition reappeared. Soon after, the patient left the city, and was lost sight of.

Origin and Diagnostic Value of Cutaneous Striae During Pregnancy.—Sfameni's researches lead him to conclude that cutaneous abdominal striae are dependent on three conditions: (1) distention of the abdominal walls, through the increase in volume of the contents of the abdomen; (2) the deposition of fat in the subcutanous cellular tissue, and (3) the simultaneous action of both factors within a short time. Striae of the breast depend on the deposition of fat and hypertrophy of the milk glands. Striae of the breast and abdomen are almost exclusively associated with the pregnant condition, and have therefore considerable medicolegal significance for the diagnosis of pregnancy.

Albuminuria in Relation to Infarct Formation.—Ravenstein refers to Haffner's researches to discover the relationships, if any, between placental infarcts and the albuminuria of pregnancy. The result of Haffner's investigations was negative. Ravenstein examined 260 placentas, 72 per cent. of which showed macroscopically infarct formation. Albuminuria was infrequent, only 14.6 per cent. of the examined cases presented albumin in the last week of pregnancy or at childbirth. Haffner's findings were thus confirmed.

Primary Mortality in the Freund-Wertheim Radical Operation.—Süssmann reports what he maintains is the lowest percentage of mortality on record for the Freund-Wertheim operation in cancer of the uterus. Between 1913 and 1922 he performed in 168 cases the extended Freund-Wertheim operation with a primary mortality of six patients, or 3.57 per cent. The best previous records were a 6.4 per cent. mortality in Kubinyi's series, and 6 per cent. in Bumm's series. In endeavoring to discover the causes for his low mortality, he could think of only three factors that may have had a favorable influence: (1) carrying out the operation in lumbar anesthesia by means of a 10 per cent. solution of tropacocain, which did away with lung injuries and the frequent vomiting and nausea after the operation. (By the frequent postoperative vomiting different portions of the intestine are brought in contact with the operative area, which may transfer into the peritoneal cavity cancer cells from the peritoneum); (2) comparatively short duration of the operation (from forty-five to fifty minutes), and (3) the elimination of assistants. Shortly before beginning the laparotomy he cleanses the cancer well with a disinfectant solution. Then the curet is applied. Afterward the crater is disinfected with alcohol and tincture of iodin and then mopped clean with vioform gauze.